

# Rock Products

DEVOTED TO  
Concrete and Manufactured  
Building Materials

Vol. VIII.

CHICAGO, ILL., JUNE 22, 1909.

No. 12.

## CAROLINA PORTLAND CEMENT COMPANY

We are the largest distributors of Portland Cement, Lime Plaster, Fire-brick and General Building Material in the Southern States, and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere. Also Southern agents for the "Dehydratine's" waterproofing material. "Universal," "Aeme" and "Electroid" Brands Ready Roofing. Get our prices.

Charleston, S. C.

Birmingham, Ala.

Atlanta, Ga.

New Orleans, La.

## DEXTER Portland Cement

THE NEW STANDARD

Sole Agents **SAMUEL H. FRENCH & CO.** Philadelphia



## SPECIAL FEATURES IN THIS NUMBER

Reinforced Concrete Grain Elevators—Modern Type.  
Developing the New York Building Code—Full Discussion.  
Cincinnati Turn Fest Statuary—Plaster Models.  
Plant of the Kosmos Portland Cement Company.  
United States Crushed Stone Company's Plant at McCook, Ill.  
Busy Retailers of Supplies Realizing the Grand Rush of the Season.

## UNION MINING COMPANY

Manufacturers of the Celebrated

### MOUNT SAVAGE FIRE BRICK

GOVERNMENT STANDARD.

DEVOTE a special department to the manufacture of Brick particularly adapted both physically and chemically to

**Lime Kiln and  
Cement Kiln  
Construction**

Large stock carried. Prompt shipments made. Write for quotations on Standard and Special shapes, to

**UNION MINING CO.,  
Mount Savage, Md.**

CAPACITY, 60,000 PER DAY.  
ESTABLISHED 1841.



## Phoenix Portland Cement

UNEXCELLED FOR ALL USES.  
Manufactured by  
**PHOENIX CEMENT CO.**

NAZARETH, PA.

Sole Selling Agent WM. G. HARTMAN CEMENT CO.,  
Real Estate Trust Building PHILADELPHIA, PENNSYLVANIA

## Ottawa Silica Co.'s Washed White Flint Sand

Is used for sawing stone in more than a dozen states. Cuts more and lasts longer than any other sand on the market. Unexcelled for Roofing, Facing Cement Blocks, White Plaster, etc. Freight rates and prices on application.

**OTTAWA SILICA CO., . . . Ottawa, Ill.**



BEST BELT  
FOR GRIFFIN,  
TUBE AND  
BALL MILLS

## Chicago Belting Co.

CHICAGO, PHILADELPHIA, PORTLAND, ORE., NEW ORLEANS.

MAKERS OF **Leather Belting**

BEST BELT  
FOR  
DAMP  
PLACES



## ALMA Portland Cement

STANDARD BRAND  
OF  
MIDDLE WEST.

Specially adapted to all Reinforced Concrete and High-Class Work.

**Alma Cement Co.  
WELLSTON, OHIO.**

How do you figure your Lime Kiln, Rotary Cement Kiln and other furnace expenses and charges for Refractories?  
By the cost of the BRICK, or by the length of the service they will give?

**Harbison-Walker Refractories Co.** { FIRE CLAY  
SILICA  
MAGNESIA  
CHROME } **Brick**

Are made of the highest grade raw materials under expert supervision, in modern up-to-date works, and are worth more because better than others. They last longer and are more economical. You can prove this statement in your own works by sending us a trial order. Information, records and prices on request.

**Harbison-Walker Refractories Co.**  
LARGEST CAPACITY PITTSBURG, PA. PROMPT SHIPMENTS

**THIS SPACE  
FOR SALE  
GOING!**



## A PERFECT RECORD FOR TEN YEARS IN ALL KINDS OF CONCRETE WORK

Send for 72 page Illustrated Catalog No. 25

**MARQUETTE CEMENT MANUFACTURING CO.**  
Marquette Building, Chicago





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# Rock Products

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Concrete and Manufactured  
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Volume VIII.

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Number 12.

## REINFORCED CONCRETE GRAIN ELEVATORS

Engineering Problems Work Out to the Best Advantage.  
Fire Resisting and Economical.

Grain elevators of reinforced concrete are multiplying, for the reason that the material offers two qualifications not possessed by any other obtainable to such constructions in the past. It will be recalled that the great Armour elevator at Chicago was destroyed by fire last fall, along with its contents of several million bushels of wheat. That elevator was of brick, steel and mill construction, such as has commonly obtained for such constructions up to the time of the introduction of reinforced concrete. Such losses, even when carried by insurance companies, as in this case, cannot relieve the subtraction of food material from the human family, where one year's food for at least a million people is wiped out in a few hours. Had the Armour elevator been constructed wholly of reinforced concrete that fire could not have transpired. Had there been a fire it would probably have been insignificant. So the fire-resisting quality of reinforced concrete is a first essential in this type of building, and this is now well recognized.

A few months ago ROCK PRODUCTS illustrated the immense grain elevators recently completed by the James Stewart Company, contractors, at the harbor of Buffalo, N. Y., where transfer of shipments by lake are made for railroad distribution eastward. They are perhaps the largest grain receptacles in the world, and were constructed entirely of reinforced concrete, both on account of the fire protection and for another reason, which follows:

The storage of grain presents an engineering problem which is not present in any other class of merchandise. It consists of very small elliptically globular particles which are all hard and smooth, so that in large masses it is almost as mobile as water or shot, and for this reason in loading it is governed by the same rules of direct gravity and cumulative lateral thrusts against the receptacles that contain it. In this phase of the problem of designing grain elevators reinforced concrete is again very desirably unique. The flexibility of the material by which the designing engineer can deliberately place the calculated strength at whatever part of the structure his loads may require with facility is a factor that has never been known in structural materials until armored concrete was developed practically. Besides this, it has been found that grain elevators, fire resisting and designed with the best engineering attainments, costs no more than those which have been far less satisfactory and profitable in the long run as a business investment.

Not only is reinforced concrete suitable for the construction of such immense elevators as those cited, but it is equally adaptable to the smallest elevators, even the little frontier grain bin and flour mill.

In a recent issue of the *Grain Dealers' Journal* an interesting account is given of a small grain handling plant which has just been completed on the north bank of the Ohio River at New Albany, Ind., where

the transfer of grain from river to rail shipment is a growing business. The many gateways, or river crossings on the Ohio, Mississippi and Missouri Rivers can take a suggestion for the construction of grain elevators for the future.

As shown by our illustration this plant is the property of McDonald & Co., who do a transfer, sacking, cleaning and general grain business at New Albany, most of which crosses the river and is distributed south of the Mason and Dixon line. The house was

specially designed by the contractors, the Macdonald Engineering Company, of Chicago, to meet these requirements. Local sand and gravel aggregates taken out of the river bed were used, and Lehigh Portland cement, together with steel rods and wire fabric, making as completed an all concrete job.

The Ohio River, at long intervals of time, claims the site selected for its bottom, without regard to the

(Continued on Page 37.)



TYPE OF MODERN CONCRETE GRAIN ELEVATOR.

# POWER AND MINING MACHINERY COMPANY

## McCully Crushers Lead

They  
Hold the  
Record  
in 1909  
on Large  
Sizes.  
Other  
Makes  
Completely  
Over-  
shadowed.



Over  
Eighty  
Crushers  
Smaller  
Than No. 9  
Shipped  
During  
Last Six  
Months All  
Over North  
America, to  
Europe and  
to Australia

Since November 1, 1903 we have built nearly all the large crushers sold in this country. The table below gives interesting facts regarding recent sales of large crushers.

	Number of Crusher	Size Stone Crusher Will Take	Size of Product Cubes		Number of Crusher	Size Stone Crusher Will Take	Size of Product Cubes
Dolese & Shepard - - - -	Mammoth	42 in.x140 in.	6 in.	Meramec Portland Cement Co. -	10	24 in.x99 in.	5 in.
Woodruff & Pausch - - - -	"	42 in.x140 in.	6 in.	Monarch Portland Cement Co. -	10	24 in.x99 in.	5 in.
Hunt Engineering Co. - - - -	"	36 in.x130 in.	6 in.	Illinois Stone Co. - - - - -	10	24 in.x99 in.	5 in.
U. S. Government for Panama	"	36 in.x130 in.	6 in.	Allentown Portland Cement Co.	10	24 in.x99 in.	5 in.
Canal Commission - - - -	"	36 in.x130 in.	6 in.	Three Forks Portland Cement Co.	9	21 in.x76 in.	4 in.
Brownell Improvement Co. - -	11	27 in.x110 in.	5 in.	Dolese & Shepard - - - - -	9	21 in.x76 in.	4 in.

**DO YOU NEED FURTHER DEMONSTRATION OF THE SUPERIOR MERITS OF THE McCULLY?**

Write for Catalog 4 R, "Machinery for Rock Crushing Plants."

### Sales Offices

CHICAGO  
EL PASO  
NEW YORK  
115 Broadway

Works

and General Office

**Cudahy, Wis.**

Suburb of Milwaukee

### Sales Offices

MEXICO CITY  
SALT LAKE CITY  
SAN FRANCISCO  
Sheldon Building

# Hydrated Lime

Bulletin 29

## Think It Over— Then Actually ACT!

### Is It Good Business Policy—

- for you to continue in non-progressive ways?
- to go on year after year burning Lime and selling it on a sma'l margin of profit when you can so easily install a Kritzer Continuous Hydrator—which would put you above lime manufacturers' competition and enable you to make **BIG PROFITS?**

### Why Not Make The Most Of Your Opportunities?

- Why be satisfied with "doing well enough?"
- Just because you have up to the present managed to dispose of your output, will not excuse you from being wide-awake and keeping abreast trade conditions.
- Lime manufacturers everywhere are now realizing that not only to be up to-date and progressive, is desirable, but that in view of changed condition and competition—it becomes absolutely necessary to install a Hydrating Plant to meet the rapidly increasing demand for Hydrated Lime—to hold trade—and to keep their plant in full operation during dull times!
- Architects and Owners, Masons and Contractors, everywhere, are demanding and using **Hydrated Lime**—more and more—because of its proven superiority.
- And Dealers all over the country are not only becoming more eager to supply the **Increased Demand For Hydrated Lime**—because of the **Better Profits**—but they are also waking up to the other great advantages accruing from carrying stocks of **Hydrated Lime**.
- The manufacturer who neglects to install a Hydrating Plant—or at least investigate the matter—will soon discover that his "sin of omission" has been indeed costly.

### Hydrated Lime Has Come To Stay The Demand Is Increasing Steadily and Rapidly

Our continuous process is the only process that has proved successful in hydrating a **High Calcium and Magnesium Lime**.

Write us today and let us send you full information regarding this subject of Hydrated Lime.

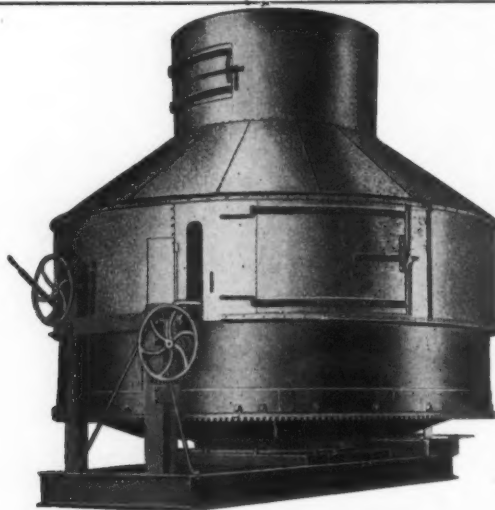
It is not only important but of vital interest to you and your business.

---

**The Kritzer Company**  
115 Adams Street, - CHICAGO, ILLINOIS

Tell 'em you saw it in **ROCK PRODUCTS**



[illegible]

**We will furnish full information,  
booklets and interesting data on  
your request**

*"We like to answer questions"*

## Manufacturers

DULUTH. MINN.

**Tell 'em you saw it in ROCK PRODUCTS.**

The Quality That Never Fails

# SUNFLOWER PORTLAND CEMENT

Your Cement Needs Can Be Supplied Efficiently

Daily Capacity of 8,000 Barrels. Write today to

**United Kansas Portland Cement Company**

General Sales Office: 811 Commerce Building, Kansas City, Mo.

## ROYAL PORTLAND CEMENT

ABSOLUTE UNIFORMITY

HIGHEST STANDARD

DAILY CAPACITY, 6000 BARRELS



The best technical and practical skill, backed up by an experience of years, operating the most modern plant in the country on the highest grade of raw materials, justifies our claim that

ROYAL IS PERFECTION

LET US QUOTE PRICES.

**DIXIE PORTLAND CEMENT CO.**

Sales Office, James Building  
**CHATTANOOGA, TENN.**

## Pennsylvania Portland Cement

Stands for Quality



**BERT F. ANDREWS**

Sales Manager

Castalia,

Ohio

**High Tensile Strength  
Light Uniform Color  
FINELY GROUND**

**CASTALIA PORTLAND CEMENT CO.**

PITTSBURGH, PENNSYLVANIA

Plant: Castalia, Erie County, Ohio

Capacity: 2,000 Barrels Daily

Tell 'em you saw it in ROCK PRODUCTS

# CEMENT SENSE

The **finest ground** Portland Cement is the best.

"Uniformity" means nothing unless it is uniformly ground.

"Color" means nothing essential except as an indication of fineness.

"Standard Ground" means nothing when compared with

## Ash Grove Superfine Portland Cement

For **Ash Grove Superfine** is ground uniformly 10 per cent finer than Standard. Eighty-five per cent of this excellent cement will pass through the 200-mesh sieve. This means that users can

## SAVE 20 Per Cent

at least by specifying **Ash Grove Superfine**. Write to us about it.

**Ash Grove Lime & Portland Cement Co.**  
KANSAS CITY, MO.



BERKSHIRE IS USED FOR ALL OUTDOOR AND INDOOR WORK  
WHERE A PERMANENT PURE WHITE EFFECT IS DESIRED

SOLD BY

**George W. De Smet**

SOLE DISTRIBUTOR FOR

## Vulcanite Portland Cement

Also for the Celebrated WATERPROOFING COMPOUNDS

### DEHYDRATINE

Damp and Water-resisting Paint. Waterproofs structures from cellar to roof.

### SYMENTREX

(Liquid Concrete)

Beautifies and waterproofs brick and concrete surfaces.

### HYDRATITE

This compound makes concrete impervious to water.

OFFICES:

317 CHAMBER OF COMMERCE

**Chicago, Ill.**



PORTER RESIDENCE, Boulevard, Wilmington, Delaware

WALTER STEWART BROWN, Architect

Sayre & Fisher Brick laid with one inch Mortar Joint.

All brick mortar and rough casting of :: :: :: ::

## Nazareth Portland Cement and Limoid

For information concerning these materials write

## CHARLES WARNER COMPANY

General Sales Agent, WILMINGTON, DELAWARE

Land Title Building  
Philadelphia, Pa.

Metropolitan Building  
New York, N. Y.

161 Devonshire Street  
Boston, Mass.



## Medusa Water-Proof Compound

Makes all Concrete Watertight]

It Is Not a Wash

Illustration of Oil City, Pa., concrete reservoir which is being water-proofed with Medusa Water-proof Compound. Write for pamphlet describing its use. Do not accept a



substitute, as there are many adulterated compounds on the market.

Sample of our Pure White Portland Cement sent on request.

Obtain our price on Medusa Portland. Annual Capacity 1,500,000 bbls

**Sandusky Portland Cement Co.**  
SANDUSKY, OHIO

Tell 'em you saw it in ROCK PRODUCTS.



### THAT THE CAPILLARY ATTRACTION OF CEMENT SURFACES CAUSES INCIPIENT DISINTEGRATION

has never been questioned. Is your building capillary positive or capillary negative? The best method of obtaining impermeability, uniformity and attractiveness is by the use of



### Bay State Brick & Cement Coating

which fills the pores and gives a uniform color, thus doing away with the dull, monotonous blue grey of Portland Cement. THIS COATING IS FIREPROOF and bears the label of the NATIONAL BOARD OF FIRE UNDERWRITERS. Write for our book containing 100 illustrations, entitled: "How to Decorate and Protect Cement Surfaces." Free on application to

**WADSWORTH, HOWLAND & CO., Inc.**

84 Washington St.  
Boston, Mass.

Branch Office: 156 Fifth Ave.  
New York City

### No. 3 Dehydratine

## STAINPROOFING COMPOUND

Protects marble, granite and limestone from stains caused by absorption of moisture and from injurious effects of chemical action communicated from the surrounding masonry.

## A. C. Horn Co.

Waterproofing Engineers and Manufacturers  
of Waterproofing Compounds

8-10 Burling Slip

New York City

## "ANHYDRA"

The Perfect Waterproofing for All Kinds of Concrete Work

Thoroughly demonstrating experiments prove that this waterproofing preparation is the most economical and efficient thing of the kind ever offered on the market. It is permanent and constant in colors of the finished product, because it is made of natural materials of basic character that are unchanging. Permanent as the rock of ages. Quotations in any quantity.

## Anhydrous Pressed Stone Co.

TELEPHONE MAIN 5278

134 Washington Street

CHICAGO, ILL.

## Aquabar Makes Your Concrete Waterproof

There is no better material for homes than concrete if properly waterproofed. Ordinary concrete is not waterproof.

An un-waterproof concrete wall is an ossified sponge.

It absorbs moisture rapidly. Like a stone filter, it permits water to pass through. If it were not for the moisture thus absorbed, concrete would not freeze. It is this freezing and thawing which makes un-waterproofed concrete disintegrate.

**Aquabar**, as the name implies, is a bar against water. It makes a concrete wall or floor damp-proof and water tight. A concrete tank in which **Aquabar** is used, will not let the water out. A concrete cellar in which **Aquabar** is used, will not let the water in.

**Aquabar** is a colorless, paste-like solution. It is introduced into the cement or concrete mass through the medium of water. It slightly retards the rapid setting of the cement, but does not decrease its tensile strength.

**Aquabar** crystallizes and becomes a part of the mass, sealing completely the voids between the sand and cement for all time.

### You Don't Need High-priced Labor to use Aquabar

**AQUABAR** is so easily mixed with the cement that unskilled labor can handle it. Being mixed with water, it comes into contact with every particle of the concrete. Thus, it gives a more uniform piece of work than is possible to secure by any other waterproofing method.

**AQUABAR** requires practically no additional labor. It renders concrete impermeable in all its parts without interfering with the ordinary construction or laying.

**AQUABAR** can be used in mass as a concrete, or as a facing for concrete works.

### Concrete is Valueless if not Waterproof

Concrete is the modern material for the exterior walls of residences, for cellars, walks and fences. It is very economical, providing it is waterproofed. At a trifling increase in cost, your concrete can be waterproofed with this most successful, concrete waterproofing material—**AQUABAR**.

If you are to build a home, if you are an architect or a contractor, if you have any waterproofing problems, you should

know the facts about **AQUABAR**. It is the best, the most absolute, the most reliable and the most economical of all waterproofing compounds. Apply to the

**Wisconsin Lime & Cement Co.**  
606 Chamber of Commerce,  
Chicago, Ill.,

agents for the State of Illinois. Manufactured by the **Aquabar Company**, Philadelphia, Pa.

**AQUABAR** is used and recommended by the  
Craftsman Home Building Company

## THE AQUABAR COMPANY

1228 Locust St., Philadelphia, Pa. 33-34 W. 33rd St., New York City



## A Dawn of a New Prosperity

## PEIRCE CITY WHITE LIME

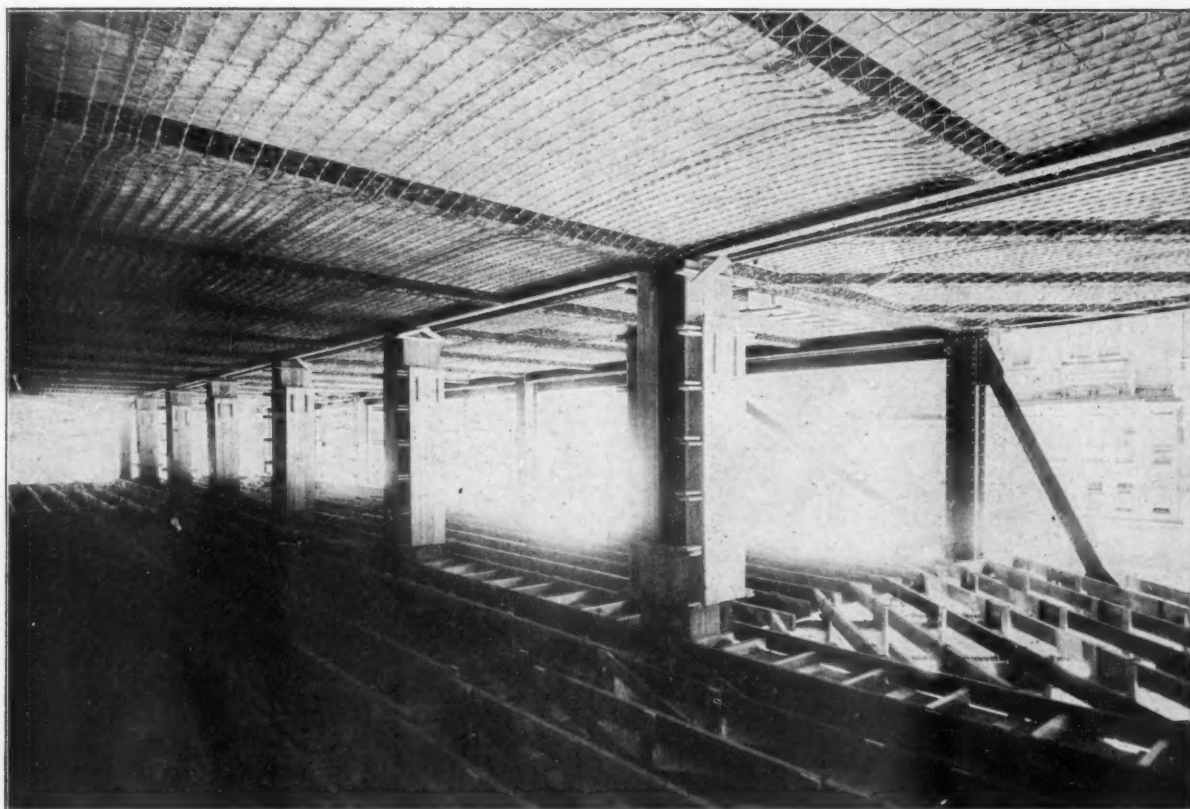
THE QUALITY LIME

Brings prosperity to those who buy it, because it is the whitest, purest and strongest lime in the world, and sure to give satisfaction. Our barrels are made of the best cooperage, bound by steel hoops that do not break. Write us at once for prices.

**PEIRCE CITY LIME CO.**

Peirce City, Mo.

# Triangle Mesh Concrete Reinforcement



WHITE BLDG., SEATTLE, WASH. Built by Stone & Webster Eng. Co. Triangle Mesh Reinforcement Used.

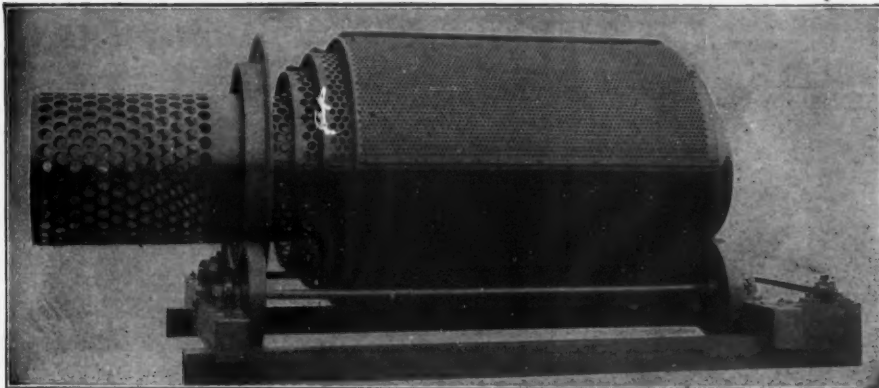
Made by  
**American Steel & Wire Co.**

CHICAGO, NEW YORK, DENVER, SAN FRANCISCO.

WRITE FOR ILLUSTRATED PAMPHLET.



# JOHN O'LAUGHLIN'S SCREEN



made solely by Johnston & Chapman is the

## ONLY SCREEN

on the market for wide-awake quarry-men and miners, who want to separate crushed granite, limestone or other minerals, gravel, sand, coal or coke. It will soon earn its cost in saving of repairs, and maintenance, and reduced power, and will do more and cleaner work than any other cylindrical screen of like area. No one can afford to keep old traps in use when the O'Laughlin installed

## NOW

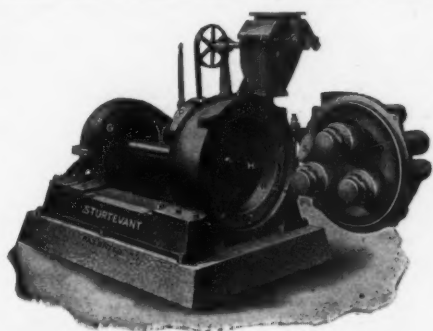
will from the moment it starts give a better and larger product, and a big interest on your investment in continuous saving in cost of repairs, renewals, and power. For particulars, address:

## JOHNSTON & CHAPMAN CO.

1333 to 1345 Carroll Avenue, CHICAGO, ILLINOIS

Perforators of Sheet Metals, Flat, Cylindrical, and Conical Perforated Screen Plates for Quarries, Mines, Reduction Works, Mills and all Industrial Purposes.

The advantages of these screens are described in detail in a circular which WE WILL MAIL TO ANY ADDRESS. Mr. John O'Laughlin, the inventor, has designed many notable improvements in rock-drilling, quarrying, crushing and screening machinery, and uses these improved screens in his own crushing plants, which others have declared "to be the most perfect in existence in every detail." The O'Laughlin Screen is an important factor in the most modern and perfect stone-crushing plant.



## A RING-ROLL MILL

working in connection with a  
**NEWAYGO SCREEN**

makes the simplest and most economical  
rock-grinding plant yet produced.

Feed, 1½ inch and Finer. Product, from 16 to 100 Mesh.

SEND FOR CATALOGUES Nos. 77 AND 79  
in which is shown its superiority in

**ACCESSIBILITY  
ECONOMY  
EFFICIENCY**

## STURTEVANT

New York  
Pittsburgh

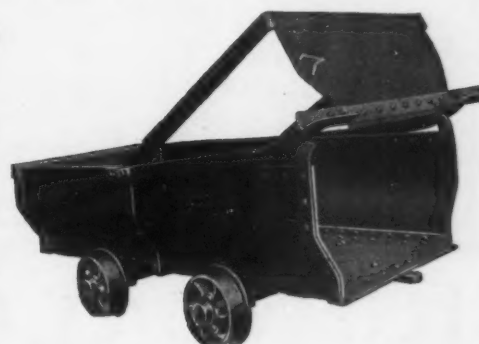
**MILL COMPANY**  
Boston, Mass.

Chicago  
St. Louis

## → IN STOCK!! ← 8-1½ YD. QUARRY CARS

For immediate shipment similar to cut below

36"  
GAUGE



14"  
WHEELS

These Cars are new all steel, equipped with  
self-oiling wheels and wood sub sill bumpers.  
Height 34" top of rail to top of car.

See catalogue No. 10-R for other types.

**H. B. Sackett Screen & Chute Co.**

4212-4226 State St., Chicago, Ill.

Tell 'em you saw it in ROCK PRODUCTS.



# Amatite Roofing



(See letter below)

Colchester, Connecticut, September 4, 1908.

Barrett Manufacturing Company:

Dear Sirs: The Amatite Roofing on my own grain store is giving much better service than I could believe it would at such a moderate price. It is by far the cheapest roofing on the market when you consider the wearing qualities. Am going to use it on my other building. (Signed) Amos C. Case.

This is a type of hundreds of letters which we get regarding Amatite. It is better made, has better waterproofing material and weighs more per square foot than any other roofing of the same price.

And Amatite has one distinction which makes it stand out above all others—it has a **real mineral surface** which does away entirely with painting.

No other ready roofings compare with it from the standpoints of low cost, no maintenance cost and absolute protection. Sample and Booklet on request.

## Barrett Manufacturing Company

New York, Chicago, Philadelphia, Boston, Cincinnati, Minneapolis, Cleveland, St. Louis, Pittsburg, New Orleans, Kansas City, London, Eng.



### "CONTINENTAL" DUMP CARS

Our Dump Cars are used on most of the large rock and dirt moving operations throughout the United States and Canada.

**Continental Car and Equipment Co.**

Works: Highland Park, Louisville, Ky.

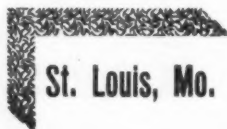
New York, 17 Battery Place



### CHARLES W. GOETZ LIME & CEMENT CO.

MANUFACTURERS OF AND DEALERS IN

Glenwood Lime, Banner Brand Louisville Cement, Portland Cements and Building Materials.



St. Louis, Mo.

### FOWLER & PAY

Brown Hydraulic Lime, Austin Hydraulic Cement, Jasper Wall Plaster, Brick, Stone.

241 F. W. 12: Austin, Minn.  
241 F. W. 12: St. Dodge, Iowa.  
241 F. W. 12: Minnesota Transfer.

MANKATO, MINN.

## HIGH CALCIUM HYDRATE

The Best for Every Purpose where Chemically Pure Lime Is the Indispensable Element

**Sand Lime Brick** Difficulties can be Simplified and Overcome by the use of our Correctly Hydrated Lime.

**Cement Blocks** can be made more waterproof, cheaper, and of lighter color by the use of from 20 to 40% of pure hydrate, free from magnesia. This substitutes the same amount of cement and does not impair the strength of the block.

**Finishing Lime** As a finishing lime our Hydrate is unsurpassed. It is also a valuable addition to cement mortars, and for making mortar for brick and stone work.

Commercial and chemical requirements call for pure lime. We furnish a product of 98% analysis.

Kansas City

**MARBLEHEAD LIME CO.**

Chicago

Tell 'em you saw it in ROCK PRODUCTS

# The Ohio and Western Lime Company

**WORKS AT**  
Huntington, Indiana  
Marion, O.  
Gibsonburg, Ohio  
Fostoria, Ohio  
Sugar Ridge, Ohio  
Tiffin, Ohio  
Genoa, Ohio  
Limestone, Ohio  
Lime City, Ohio  
Portage, Ohio  
Luckey, Ohio  
Bedford, Ind.

MANUFACTURERS OF AND WHOLESALE DEALERS IN

Ohio and Indiana White Finishing Lime, Ground  
Lime, Lump Lime, Fertilizer, Hydrate Lime,  
Cement, Plaster, Hair, Etc., Etc.

Capacity  
8000 Barrels  
Per Day

MAIN OFFICE: Huntington, Ind.

Branch Offices: Marion, Ohio.

# The Kelley Island Lime and Transport Co.

CLEVELAND, OHIO.

**Tiger Brand White Rock Finish the best known and  
smoothest working Hydrated Lime manufactured.**

WRITE FOR PRICES

**THE LARGEST LIME MANUFACTURERS IN THE WORLD.**

## Western Lime & Cement Co.

MILWAUKEE, WIS.

Sole Manufacturers of **LIMATE** The first and best Hydrated  
Lime in the market . . .

In tensile strength for stone and brick Limate has no Equal!  
laying and adhesive strength for plastering

The thirteen lime plants of

## Western Lime & Cement Co.

Have a total lime producing  
capacity of 10,000 barrels daily

Distributors of Best Portland Cements and Masons Building  
Materials. Correspondence respectfully solicited

## Farnam "Cheshire" Lime Co.

OF CHESHIRE, MASS.

MANUFACTURERS OF THE

## Celebrated Cheshire "Finishing" Lime

Well known throughout New York and the Eastern States as the finest  
finishing lime manufactured. The special feature of this lime is its quick  
and even slacking, thus preventing any cracking or checking when put  
on the wall. It is the best lime used in the country today for all

**HIGH GRADE FINISHING WORK**

Selling Department, 39 Cortlandt St., N. Y., C. J. CURTIN, Pres't.

## MITCHELL LIME

Is Chemically Pure and Practically Free from Waste

The Strongest White  
Lime on the Market.  
Used and recommended  
by Sand-Lime Brick  
Manufacturers, Chemists,  
Soap and Glue Works,  
Plasterers and Masons.

*Prices Cheerfully Submitted*

## Mitchell Lime Company

MITCHELL, :: :: INDIANA

Tell 'em you saw it in ROCK PRODUCTS.

**SAVE MONEY, TIME AND LABOR**  
**USE**  
**Monarch Hydrated Lime**



If Monarch Hydrated Lime wasn't better or cheaper than lump lime nobody would buy it. As a matter of fact it is both.

Monarch Hydrated Lime costs less delivered, can be thoroughly soaked in twenty-four hours, doesn't have to be screened, carries more sand, gauges with a third less plaster, spreads further and easier and will not air slack.

That's the whole story. Now try it. Compare the cost and the results with those of ordinary lime—and we have a new customer.

Monarch Hydrated Lime is made in Carey, Ohio, where the limestone is just right and the shipping facilities good. Our prices will satisfy you.

We also crush stone for all purposes.

**THE**  
**National Lime & Stone Co.**  
**CAREY, OHIO.**

**Burton Powder Co.**

MANUFACTURERS OF

**Good Luck Dynamite**



AND

**Blasting Powder**

Dynamite Factory:

New Castle, Pa.

Powder Mill:

Quaker Falls, Pa.

Main Office, PITTSBURGH, PA.

Western Sales Office, Chicago

**"IF IT IS**

**LIME**

**WE MAKE IT"**

**Lump - Barreled - Hydrated - Ground**  
**STRONGEST IN OHIO.**

**We are not connected with any Trust or Combination.**

WRITE US  
 PHONE US

**The Scioto Lime and Stone Company, Delaware, Ohio**

**PATENT SOAPSTONE FINISH**

PLAIN AND IN COLORS FOR WALLS AND CEILINGS

**Patent Soapstone Mortar**

Prepared in any Color for Laying Pressed and Enameled Brick, Stone  
 Fronts, Terra Cotta, Chimneys, Fire Places, Etc.

The Dodge Blackboard Material or Artificial Slate.

The Potter Blackboard Material.

SOAPSTONE MICA. CONCRETE DRESSING  
 CRUSHED, GROUND AND BOLTED SOAPSTONE.

**AMERICAN SOAPSTONE FINISH CO**

DODGE, Proprietor

CHESTER DEPOT, VT

Tell 'em you saw it in ROCK PRODUCTS.

**NEW JERSEY LIME CO.**



HAMBURG,  
 N.J.

MANUFACTURERS  
 OF

MAFEE,  
 N.J.

**BUILDERS' LIME**

**CHEMICAL LIME**

**HYDRATED LIME**

HAMBURG, N. J.

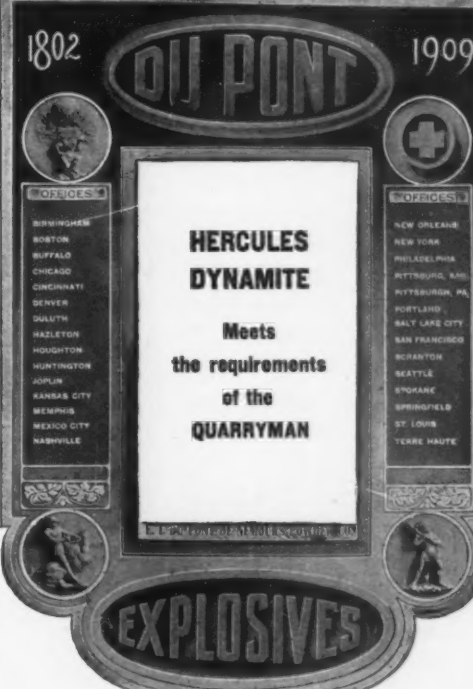


**"INDEPENDENT DYNAMITE—  
Always consistent in price and quality."**



**INDEPENDENT POWDER**  
COMPANY OF MISSOURI  
HOME OFFICE · JOPLIN · MO.  
FACTORY · JOPLIN · MO.  
GENERAL SALES OFFICE ·  
PIERCE BLDG. SUITE 655-67 · ST. LOUIS · MO.

1802 **DU PONT** 1909



**HERCULES DYNAMITE**  
Meets  
the requirements  
of the  
**QUARRYMAN**

**EXPLOSIVES**

OFFICES:  
BIRMINGHAM  
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CINCINNATI  
DENVER  
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HARTFORD  
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MEMPHIS  
MEXICO CITY  
NASHVILLE  
NEW ORLEANS  
NEW YORK  
PHILADELPHIA  
PITTSBURGH, PA.  
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# AETNA DYNAMITE

**The Standard Explosive  
Always Full Strength  
Always the Same**

**Send for new 66 page Blasting Manual**

MADE BY

**THE AETNA POWDER COMPANY**

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CHATTANOOGA, TENN.  
XENIA, OHIO

Woodward Building  
BIRMINGHAM, ALA.

Tell 'em you saw it in ROCK PRODUCTS.

# The Bradley Producer

## Gas Process for Burning Lime.

Four and three quarter pounds of lime to one pound of coal on a large output is now being secured every day.

Does that look like economy to you?

=====RESULTS GUARANTEED=====

**Duff Patents Company** Frick Building  
Pittsburg, Pa.

### HIGH GRADE FIRE BRICK

For Cement Works, Lime Kilns, Cupolas, Steel and Iron Works of every description. :: :: ::

**Louisville Fire Brick Works,**

K. B. GRAHN, Prop.,  
Highland Park, Ky., P. O.



**The Buckeye Fire Clay Co.**

Manufacturers of

Sewer Pipe, Flue Linings, Chimney  
Tops, Fire Brick, Grate Tile, Ground  
Fire Clay, Wall Coping, Etc.

UHRICHVILLE, .. OHIO

### Buffalo Brick Clamp

**Will Pay  
for Itself**

In three days by  
handling brick  
over the old  
method.

By saving twenty-five per cent.  
time unloading a  
car of brick.

By not making  
a mistake in the  
count, as they  
can be adjusted  
from four paving  
brick to twelve  
regular.



THE ONLY TOOL TO HANDLE BRICK

Manufactured by

**Mostberger-Langner Iron Co.**

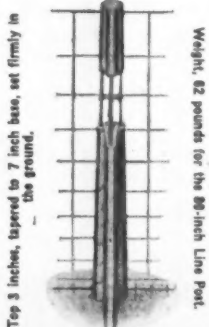
876-890 S. Division St., Buffalo, N. Y.

By saving from  
50c to \$1.00 on  
every thousand  
pressed brick by  
not chipping.

Pavers save  
thirty-three per  
cent. by carrying  
bricks from curb  
to paver instead  
of wheeling  
them.

Takes from four  
paving brick to  
twelve regular.

**McElroy Post**



Top 3 inches, tapered to 7 inch base, set firmly in the ground.

Weight, 82 pounds for the 80-inch Line Post.

## YOU

**Will never look "So Satisfied" as when you remove a post from  
MY NEW MOLD**

A little of the inside detail is here shown by removing the concrete from a green post so that one of the stays is exposed as well as the heavy lateral rods.

**The McElroy Post and Pole Co.**  
CEDAR RAPIDS, IOWA

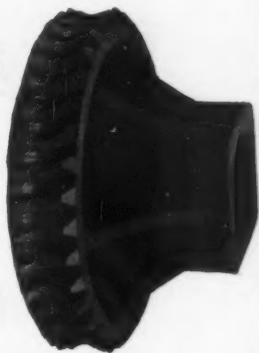
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## WHEN YOU WANT GEARS

cut or planed gears that wear,  
made mechanically exact to your  
specifications, and made quick,  
send your order to

**Nuttall-Pittsburg**

If in a hurry, wire us



**THE FULLER ENGINEERING CO.**  
DESIGNING AND CONSTRUCTING ENGINEERS  
ANALYTICAL CHEMISTS

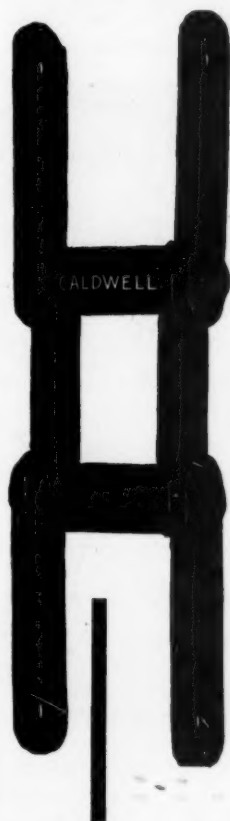
**CEMENT MILLS A SPECIALTY**

OFFICES: ALLENTOWN NAT. BANK BLDG. ALLENTOWN, PA

# MACHINERY

—FOR—

## Industrial Plants



We manufacture machinery for transmitting power, and for elevating and conveying materials in and about cement plants, rock crushing plants, lime plants, mortar works, plaster works, and other industries.

We manufacture screw conveyors, belt conveyors, and all sorts of chain and cable conveyors, for handling rock, lime, sand, etc.

We manufacture elevators, also, for handling the same kinds of material.

Our lines include shafting, couplings, bearings, collars, pulleys, gears, rope sheaves, sprocket wheels, elevator buckets and bolts, steel elevator casings, etc.

We have our own foundry, sheet metal department and machine shop. We employ first-class help in all departments and use high-grade materials.

When you are in need of anything in our line, try us.

Catalog No. 28.

**H. W. Caldwell & Son Co.**

17th St. and Western Ave., Chicago

Fulton Bldg., Hudson Terminal, No. 50 Church St.,  
NEW YORK CITY

## Do You Have Cars to Haul ? The Davenport Locomotive Will Save Money



Special Designs for Special Purposes

Any Size, Any Gauge, Any Weight

Write for Prices and Particulars

**DAVENPORT LOCOMOTIVE WORKS**  
DAVENPORT, IOWA

## Limestone and Shale

FOR MANUFACTURE OF

## Portland Cement

ON THE

## Illinois Central Railroad

IN THE

WEST AND SOUTH

## Coal, Water and Good Labor

For Full Particulars Address

**J. C. CLAIR, Industrial Commissioner**

I. C. R. R. CO.

No 1 PARK ROW, CHICAGO

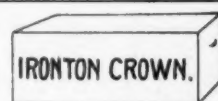


# ROTARY CEMENT LINERS.



## LIME KILN LININGS.

GROUND CLAY  
FOR  
WALL PLASTER  
AND  
BOILER SETTINGS



DIRECT HEAT

# DRYERS

—FOR—

BANK SAND  
GLASS SAND  
ROCK, CLAY  
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue S. C.

**American Process Company**  
68 William Street, NEW YORK CITY

RUUGLES - COLES

# DRYERS

RUUGLES COLES ENGINEERING CO.

NEW YORK

CHICAGO

## The Cummer Continuous Gypsum Calcining Process

See Other Advertising  
ment, Page 280

THE F. D. CUMMER  
& SON CO.  
Cleveland, Ohio

Seven plants in successful operation producing about 1,500 tons per day.

## THE WINANT COOPERAGE CO.

Staves, Hoops and Heading for Lime,  
Cement and Plaster Barrels

MILLS:  
Pennsylvania New York Maine  
Virginia Ohio

190 CEDAR STREET  
NEW YORK, N. Y.

"We are pleased to say that the returns from our Rock Products advertising have been very gratifying.

Very truly yours,  
N. J. Morehouse,  
Waterloo, Iowa."

Extract from letter.

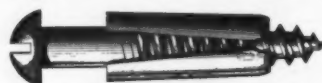
### For Immediate Shipment

Austin Gyratory Crushers.  
Austin, Western and Aurora Jaw  
Crushers.  
Quarry Pumps, Steam Drills.  
Sterling Wheel Barrows, Concrete  
Mixers.  
A lot of bargains in rebuilt crushers,  
all sizes and kinds.

Write for prices and catalogues.

The Williams Contractors Supply Co.  
COLUMBUS, OHIO

### Farrington Expansion Bolts



The most secure fastening in concrete as well as in stone.  
Send for Samples.

F. H. Farrington, 45 Broadway, New York

## C. K. WILLIAMS & CO. EASTON, PA.

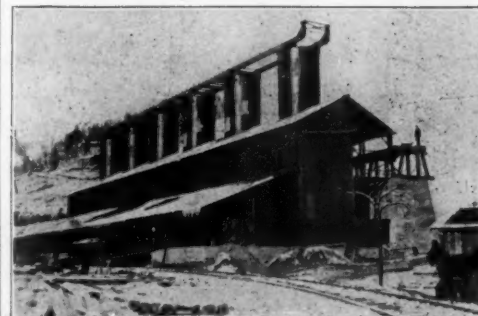
The Largest Manufacturers in the U. S.

## BRICK AND MORTAR COLORING

OF ALL SHADES

CORRESPONDENCE SOLICITED. SAMPLES AND ESTIMATES  
CHEERFULLY FURNISHED ON APPLICATION.

Tell 'em you saw it in ROCK PRODUCTS.



Lime Kilns and Plant of Blair Limestone Co.,  
Canoe Creek, Pa.

Designed by

Henry S. Spackman Engineering  
Company

42 N. 16th Street

Philadelphia, Pa.

# Rock Products

ESTABLISHED IN LOUISVILLE, KY., 1902.

DEVOTED TO CONCRETE AND MANUFACTURED BUILDING MATERIALS.

Volume VIII.

CHICAGO, JUNE 22, 1909.

Number 12.

## THE FRANCIS PUBLISHING COMPANY

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Seventh Floor Ellsworth Bldg., 355 Dearborn St., Chicago, Ill., U. S. A.  
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Communications on subjects of interest to any branch of the stone industry are solicited, and will be paid for if available.

Every reader is invited to make the office of Rock Products his headquarters while in Chicago. Editorial and advertising copy should reach this office at least five days preceding publication date.

### TERMS OF ANNUAL SUBSCRIPTION.

In the United States and Possessions and Mexico.....\$1.00  
In the Dominion of Canada and all Countries in the Postal Union.....1.50  
Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.  
Advertising rates furnished on application.

Entered as second-class matter July 2, 1907, at the Postoffice at Chicago, Illinois, under Act of March 3, 1879

The railroads report an immense revival of traffic over and above expectations.

Gypsum plaster producers are seeking for a Moses to lead them out of the land of darkness into better things.

Lime manufacturers have decided not to hold a summer meeting. Perhaps it is based upon the principle of "letting good enough alone."

The automobile delivery truck for builders' supply establishments is the subject of considerable investigation at the present time. Unquestionably there are many places where it would prove a big money saver.

As the summer vacation season arrives it reminds some of us that the material man is a rank outsider to that sensation—that is, most of them. Notice that? But we are all right in the front line about Christmas.

The interest in the good roads movement grows apace with the expansion of the automobile fad. Rock crusher men now find active allies in city business men, who beat the farmers to death in getting what they want.

Convinced that the tariff revision cannot affect building operations to be completed during the present season, baseball talk occupies its accustomed place once more, and the structural and material worlds are happy about it.

A new use for hydrated lime has been discovered by orchardists, who employ it as the vehicle for dry spraying instead of water. The growth of the hydrating business is well explained by the merits of the material itself. Those who have learned to use it are its best advocates.

Slow collections is the universal complaint in all quarters. It is the worst feature of a late starting-up season, because it improves very slowly as the season advances. If a little more activity was practiced in getting the collections cleaned up and small accounts all paid each month, it would go a long way toward helping out the situation.

Concrete chimney caps, porch columns and foundation blocks have become staple building materials throughout the west and south. All the leading retailers of supplies carry them in stock, or else have a route to get them when ordered. The same thing is true to some extent of standard building blocks, but not to the extent of the specialties mentioned.

Retailers of supplies are in the midst of the grand rush. Building operations were never more numerous and the consumption of all lines of materials was never greater. Municipal improvements such as sewers, streets and water supply plants are numerous and pretty generally on a very large scale. Of course there are the usual crops of incidental troubles, but it would be a lonesome old world without them. Business is normal at least for those who are themselves normal.

Portland cement, at once the most interesting and important of the staple building materials, seems to be taking an off season as compared with the usual activity at this time of the year. However, there are rumblings of big appropriations for heavy engineering improvements that may be turned loose at any time that will make a big difference in the appearance of things in the markets. After a decided rally there may be a mad stampede for cement at the close of the season if those in the best position to know have got it doped out right.

Out of all the discussion over the new building code for New York, which now seems to be all in a muddle over specifications, or rather limitations, for concrete, there will be developed a good model that will stand for many years without serious change. More downright structural material knowledge has been brought forward in a few weeks than could ordinarily be collected together in the same number of years. After all is said and done the metropolis will not stand for anything less than the best in the world, and the building code that is finally adopted will doubtless be based upon the best engineering advice obtainable with equal justice to all types of materials, which will be measured by their qualities alone.

The concrete industry is just now realizing its highest mission—the greatest achievement of this or any age—namely, the perfectly non-combustible home for the masses of the people. Cheap enough in its simplicity to be the least in cost of anything available and at the same time sufficiently flexible to give expression to the most elaborate and costly design that the most exacting taste can dictate. Structural tile, floor shapes of various kinds and roofing materials have all been perfected, so that all remains is to provide the goods in sufficient quantities and then let the people know about it. These things are now accomplished facts, and a revolutionary change of opinion in matters relating to home building is at hand.

The movement to organize a bank in this country for the purpose of financing South American and Central American enterprises and improvements would seem to indicate that there is no need for such things at home. That sounds well, anyhow, and can mean nothing else than that there is a mighty change since the days of clearing-house certificates. Perhaps some of our readers could suggest a number of profitable opportunities in this country that are waiting for capital to be found to insure profitable investment. There are the waterways, for instance, which might possibly use a few of these over-supply dollars to advantage. Prosperity is certainly in evidence in financial quarters when such suggestions are exploited from Washington.

Sewer pipe and other clay goods are off in a slump and have been that way for a long time. It is nobody's fault except the men who manufacture the goods. It costs money to mold, burn and carry large stocks of clay goods. The price of fuel and labor is constantly advancing, and these will continue to advance in the ordinary course of human events. Transportation on this class of goods will never have a lower rate—if anything, this is liable to advance also. The goods are worth a profit to the manufacturer, and he should pull himself together and change it. Sewer pipe distributors might also be able to make a small margin if the clay manufacturers only had a little ginger in their systems. It is a notorious fact everywhere that there is no chance of a profit in clay goods upon the present basis of doing business.



## EDITORIAL CHAT

Charles L. Johnson, who is now with the Western States Portland Cement Company, with headquarters in Kansas City, was in Chicago recently on his way to Sandusky, where he went to make arrangements for moving his family to his new headquarters.

J. B. Graham, the apostle of Crown hydrate manufactured by the Marblehead Lime Company, says that the uses for hydrated lime are on the increase and their product is finding its way into these new uses. Their plant is busy and they are very much pleased with conditions. Mr. Graham has made a specialty of lime for chemical and industrial uses and his efforts are meeting with considerable success.

For the benefit of our friends we found it necessary to increase our telephone service that we may talk to Cleveland, New Orleans and Kansas City at the same time. Our new telephone numbers are Harrison 8086, 8087 and 8088. Your calling the number will get a response.

William E. Dee, the well known manufacturer of sewer pipe, attended the auto races at Crown Point, Ind., last week. Mr. Dee is a great enthusiast of everything that pertains to automobiling and enjoyed himself thoroughly at the race course in his new and beautiful car, which he bought for the occasion. His car and contents were greatly admired by the vast crowds attending.

William Ahlborn, one of the large dealers in building material and the largest paving contractor in Hammond, Ind., came to Chicago the other week to buy a locomotive for his use in moving the large quantities of concrete for paving streets in Hammond.

C. B. Herring, manager of the Ottawa Silica Company, Ottawa, Ill., honored ROCK PRODUCTS with a call recently. This company is one of the large shippers of silica sand in this country, and Mr. Herring stated that there never was a time in the history of his company when they were shipping so much of their product.

Boston and the various cities surrounding Massachusetts Bay, commonly called "Greater Boston," are experiencing a most satisfactory building boom. Apartment houses are going up by the hundreds and light and factory buildings are also being erected in large numbers.

W. B. Hill, president of the Ash Grove Lime and Portland Cement Company, of Kansas City, is in the East on a vacation. He is accompanied by Mrs. Hill and when seen by the ROCK PRODUCTS man they were enjoying themselves on the boardwalk at Atlantic City. Mr. Hill expects to go fishing near Toronto, Canada, for about ten days. He says this is the first vacation he has had for several years, and he has a good time coming to him. He expects to be back at his desk about the first of July.

James J. Wade, of Chicago, known throughout the country as the inventor of Wade's Accessible Sewer System, is attending the convention of the Master Plumbers of the United States at Detroit. He always furnishes conventions he attends with new food for thought and this one will prove no exception to those he attended in past years.

L. J. Hewes, district manager of the Power and Mining Machinery Company, Chicago, spent the early part of the month in New York in conference with the executive officers of the company. Mr. Hewes is one of the leading crusher engineers of the country. He is assisting now the designs of some of the latest and most up-to-date plants and needless to say is installing much P. and M. machinery.

George C. Buquo, manager of the Blue Ridge Lime Company, Fletcher, N. C., has blossomed forth as a railroad magnate. He has sent the editors of ROCK PRODUCTS annual passes over the Fletcher & Mt. Pisgah Railway. About this road he says, "Our equipment and schedule may be somewhat lacking, as compared with some of the larger systems of the country, but we know our efforts to make your visit to our plant an enjoyable one will be our best."

Orin F. Perry, general manager of the Rockland-Rockport Lime Company, says that business is picking up nicely and says that before long things will have assumed normal shape again. At present there is a great deal of building going on in New York, but a great many of the biggest operations have only reached the excavation stage. When these buildings are started there will be a large quantity of lime required. Mr. Perry says that we are coming into a period of unequaled prosperity and that the high water mark of 1906 will soon be reached.

Edward M. Koch, one of the well known cement salesmen of Ohio and on the staff of the Universal Portland Cement Company, was married to Miss Marion Zollinger, of Sandusky, Ohio. The wedding took place at the First Congregational Church in that city on June 16. Mr. and Mrs. Koch will be at home after July 15 at 322 Perry Street, Sandusky.

Alfred N. Struck & Company, concrete contractors, Louisville, Ky., were recently awarded the contract for a settling basin by the Louisville Waterworks Company. It is to be of reinforced concrete construction. The value of the award is given at \$104,000, all work to be completed July 1, 1910.

H. S. Doyle, chief engineer of the concrete reinforcement department of the American Steel and Wire Company, Chicago, has been on the sick list for several weeks. For the sake of recuperation he took a turn around his ranch in southwestern Kansas, and shows up again as bright as new money.



W. H. BARTON, GENERAL SUPERINTENDENT, ASH GROVE LIME & PORTLAND CEMENT COMPANY, ASH GROVE, MO.

He reports a constant growth of the popularity of the famous "triangle mesh" reinforcement fabric. In fact, the total shipments and use of "triangle mesh" in the first five months of 1909 amounted to more than the entire year's business in 1908. Here is prosperity carved out of the merit of the goods itself with the man and the organization to put it across. A handy slide rule for calculating the steel for floor slabs of every possible span and all useful thicknesses is ready for the specifying engineer, who is too busy to figure every detail. It's a time saver which will be appreciated, because it is always correct.

J. H. Crawford, the well known rock crusher man and road contractor of Toledo, Ohio, was a recent Chicago visitor. He is trustee for several estates and business in this connection was the occasion of his trip. After work was all done he made a good golf record, although he is not ready to meet Mr. Taft as yet upon the links.

C. A. P. Turner of Minneapolis designed and superintended the erection of a very beautiful concrete bridge in one of the Twin Cities parks which is attracting a great deal of admiration. The bridge has been completed in the last few weeks, and this amounts to a new laurel to his engineering accomplishments.

Sam J. Vail of Detroit has been on the sick list. He reports business is improving, but the volume is not what it should be.

J. J. Urschel of the Woodville White Lime Company was visiting in Detroit recently.

## HYMENEAL.

BARTON-BALDWIN.—On the evening of June 9, in the home of the bride's parents at Ithaca, N. Y., Mr. William Hill Barton and Miss Edna Cameron Baldwin were married. They were surrounded by loving relatives and friends, and with all the beautiful floral accessories of the bridal month. Dr. William Elliot Griffiths, assisted by Rev. Edward A. George, consecrated the ceremony of the Congregational Church.

It is the happy culmination of a college romance. Both bride and groom are members of Cornell class of '08, and the attendants were all members of the same class, so it was in fact a college wedding. The young couple were the recipients of many rich gifts and loving tokens to mark the occasion.

Mr. Barton is general superintendent of all the lime plants of the Ash Grove Lime and Portland Cement Company, with headquarters at Ash Grove, Mo., where he will make his future home. He is one of those young men naturally chosen for success in life, alert, able, companionable and magnetic in his personality. While only twenty-four years of age, he has already won his spurs in the industrial world, and proved his fitness for the responsible position he occupies today as the successor of his father, the late J. H. Barton, who is so well remembered by our readers.

We extend our heartiest congratulations and good wishes to Mr. and Mrs. Barton, along with those of a host of the readers of ROCK PRODUCTS. May their pathway ever be strewn with happiness like the roses of June.

Frank Holland, chief clerk of the Indianapolis office of the Lehigh Portland Cement Company, was doing the honors the other day, when a ROCK PRODUCTS representative happened to call. Fred Paulson, the manager of sales, was in Louisville, headed south, and Bert Swett was also out amongst the business. They are moving cement by the train of thirty cars, at least Mr. Paulson reports three such orders all in a bunch to prominent retailers, as follows: Fritz Jahneke, New Orleans; Sloan & Company, Chattanooga, and Indianapolis Mortar and Fuel Company, Indianapolis. This is prosperity for the big Mitchell mill, which is running at full tilt.

The *Cement Age* for June had the second of a series of articles on "The Design and Construction of a Concrete House," by John Wynkoop, architect, giving all of the floor plans and elevations, and showing the decorations possible in construction of this kind. This is very excellent work, as it gives the reading public some practical information on the subject, and will undoubtedly lead to a larger and more universal use of cement for this important purpose. The author claims that the house may be enclosed in six weeks, which is probably as quick as any house of this size in a durable material could be put together. Many other points are brought out, showing the value of a construction of this kind.

The Greencastle (Ind.) plant of the A. & C. Stone and Lime Company is busy at the present time, and Mr. Armfield, president of the company, says that they expect a very busy season this summer. The company has just added very materially to the equipment at this plant and are in the best of shape for the season's run.

Rheinheimer Bros., New Paris, O., have a very good season before them and are planning to do considerable work as the season advances. Their stone quarry is in excellent shape. The boys are working at present close to the interurban railroad tracks that run from Richmond to New Paris, and they say they will soon be obliged to politely ask the company to take up the tracks and run the cars through the "tall timbers" into New Paris.

A. B. Meyer, of the A. & C. Stone and Lime Company, Indianapolis, Ind., is in Atlantic City, N. J., for a rest. He expects to return to Indianapolis the latter part of June, and again take up the management of affairs at Indianapolis. This company is one of the large building supply firms at the capital of the Hoosier State.

James McCredie, who has one of the largest yards handling building material in Aurora, is spinning over the roads of the beautiful Fox River Valley after business hours in his new and handsome automobile, driving his car like an expert chauffeur.

J. S. Putney, secretary of the Lake Shore Sand Company, has his hands full directing the details for the finishing touches to the largest sand and gravel plant in the United States, which will be in operation next month.



William H. Ford, vice president of the William G. Hartranft Cement Company, Montreal, Canada, was in Chicago and paid Rock Products a visit just before it went to press. Mr. Ford has established a record and makes a specialty of selling 5,000-barrel orders now. These are for Manitoba and other Canadian points where a large amount of cement is used.

Steve M. Wright, the well known retailer of Memphis, was a member of the Shriner delegation from his city at the Louisville convention of that order last week. He had a big white camel and other accessories indicative of the occasion and the fun thereof.

V. H. Kriegshaber of Atlanta was to be found amongst the throngs of that meeting.

### Congress Not Asked For A Penny.

"Five billion dollars is an enormous sum, but it is no more than is actually required to carry out the gigantic scheme in developing millions of acres of lands in various parts of the United States now absolutely worthless," said Mr. Hooker in explaining the plan. "Congress will not be asked to appropriate a penny."

"The maintenance of the greatest waterway in the world, composed of the Great Lakes, on which the government of the United States has expended more than \$90,000,000 for harbors and connecting channels, presents an argument in favor of the scheme to develop thousands of miles of territory in the Missouri and other valleys. The other projects outlined in the foregoing are of equal if not greater importance, and with proper backing they can be carried out successfully."

### Waterways A Good Investment.

"The construction and improvement of the deep waterways required to provide better and cheaper transportation facilities is, I believe, a 100 per cent investment, from the fact that two-thirds of the bulky freight could be shipped by water routes, at a cost to the shipper of not more than one-sixth of the present rail rates. The importance of this becomes apparent when it is remembered that the food question is becoming a world problem."

"Government figures bear out the statement that there is enough good land overflowed in Minnesota, Wisconsin, Kansas, Nebraska, Louisiana, Kentucky, Tennessee and Mississippi to make an area as large as the State of Missouri, or more than 44,000,000 acres, while in the Eastern, Central and Western States there is more than as much more, or about 100,000,000 acres in all. At a conservative estimate of \$25 an acre, the sale of this reclaimed land would justify the expenditure of \$2,500,000,000, or 150 per cent more than is required to drain it. This land would support from 2,000,000 to 3,000,000 population."

### Pointers on Estimating.

The great difference which appears in bids would suggest that there are various methods, or perhaps better, a lack of methods, in estimating. I have known mill estimators to vary 100 per cent on a small bill of material, and the bids on a \$10,000 building to have a difference of three to four thousand dollars between the high and the low bids.

While there are no fixed rules to go by in estimating a job where material and labor vary in different localities, yet there are methods that will be of great value to those who have no system at all. It is the practice of many contractors to get estimates from other sub-contractors on the various parts of the work, add them together, and the sum would be the amount of their bid. This way is not reliable, as you have no way of knowing that your estimate is correct, a mistake in any one of the sub-contractors who gave you figures would mean your bid was high or low. If his mistake was against him it would also be against the general contractor, and in many cases would have to stand it if he secured the job. A contractor should be able to estimate every part of the building himself. The estimator who arrives the closest to the right amount will make an accurate list of all the material and labor that is required to complete the building. Accuracy in taking off quantities is a very necessary factor in good estimating, and yet it is possible for a person to have a correct list of all the labor and material and yet be off in his estimate.

The factor of guess enters into all estimating, but the smaller the unit or part is the closer you will come to the right amount. It is a very tedious task to estimate a building, and many get tired when they are half done and begin to lump off the work, and just here is where they fall down and get their bid either too high or too low, or may, by chance, get it right.—Carpenter and Builder.

### Partial Report of Government Engineers Upon the Waterways.

Washington, D. C., June 16.—A fourteen-foot channel giving a deep water way from the lakes to the gulf is practicable and may be constructed by either of six different plans, the estimated cost of the combined plan, the one approved by the board of survey, being \$158,697,462, with \$6,810,000 annually for maintenance after completion of the work.

This is the conclusion of the special board of survey created by congress, reviewed and approved by the regular board of engineers for rivers and harbors, indorsed by the chief engineers and submitted to congress by Secretary of War Dickinson.

The views expressed by the board of engineers for rivers and harbors, indorsed by the chief of engineers, are:

1. It is not desirable to construct a navigable channel 14 feet in depth from St. Louis to the mouth of the Mississippi River, or from Chicago to the mouth of the Mississippi.

2. The present demands of commerce between St. Louis and the mouth of the Mississippi are adequately met by existing projects having for their object to obtain and maintain an 8-foot channel from St. Louis to the mouth of the Ohio and a channel of not less than 9 feet in depth below the mouth of the Ohio.

3. The board believes that an 8-foot channel from Chicago to St. Louis, corresponding to the present 8-foot project from St. Louis to Cairo, is the least that would adequately meet the demand of commerce, and believes such a waterway would be desirable provided its cost is reasonable.

4. Present and prospective demands of commerce between Chicago and the gulf will be adequately served by a through channel 9 feet in depth, which may be obtained without violent changes of existing methods of improvement.

The board of engineers for rivers and harbors adds: Such a depth (14 feet) is greater than required for successful river navigation and is less than required for economical lake or ocean navigation, and if adopted would require for common use on lake, river and gulf a type of vessel not now in existence, and which, if designed, would be less economical than modern lake or ocean vessels in use on those waters, or than towboat and barge navigation on the connecting waterway.

A portion of the route from Lake Michigan to the Mississippi river by way of the valleys of the Des Plaines and Illinois Rivers was reported upon in 1905 by a special board.

The report of the special board of survey is incomplete to the extent that it contains no estimate for channels of eight feet depth and nine feet depth from Lake Michigan to the mouth of the Ohio River. It is expected that these additional estimates will be ready for submission to Congress before its next session. The chief engineers are not prepared to state definitely for consideration by congress that the construction of either of these channels is desirable until after accurate estimates have been made.

In the present report consideration is given to various methods of securing a fourteen-foot channel to the mouth of the Mississippi River, all the methods proposed for securing this result being considered by both boards as practicable from an engineering standpoint except the method of improvement by means of storage reservoirs.

The six methods mentioned in the report as practicable are briefly dredging, regularization, canalization with movable dams, canalization and fixed dams, lateral canals and a combination of methods.

Of the six practicable methods the most desirable is the plan termed "the combined method." It provides for the completion of the existing project for eight-foot depth between St. Louis and Cairo and subsequently securing the additional six feet by dredging. Below Cairo it is proposed to dredge and also to provide for permanence of bank lines and channels. A fourteen-foot channel, not permanent in location and dependent upon continued dredging, might, subject to occasional interruptions, at extreme low stages, be expected in possibly five years. The estimate of time of completion of improvements by combined dredging and fixation of banks and channels is stated as approximately eighteen years.

The board claims that the immense commerce on the Rhine could be carried more readily and cheaply on the Mississippi today than on the German river.

Reference is made to the report of the inland water ways commission wherein the statement is made that 600-ton barges, drawing 15½ inches light and 6 feet when loaded to full capacity, are now common on the best water ways of Germany, and that express steamers are operated on the Elbe and Rhine which when carrying 200 tons of freight and a supply of coal draw 4 feet 11 inches and with two barges carrying 275 tons each in tow their speed is reduced from ten to three knots. These vessels are said to represent, perhaps, the most perfect type yet developed for water ways in Germany.

Reasons are given to show why the combined methods of obtaining a fourteen-foot channel at an initial cost of \$128,600,000 is considered more practicable by the board than the method of dredging alone with an initial cost of but \$15,000,000.

The board of survey considers that the property owners along the canal and the Illinois River are equitably entitled to the water power due to the natural flow alone of the Des Plaines and Illinois Rivers. Any power which results from an added flow diverted from Lake Michigan, the board holds, belongs to the people of the United States and Canada.

As to the government receiving adequate compensation for such power, the survey board favors opening the canal of the sanitary district of Chicago to free navigation and so maintaining it, the district to enjoy free use of the power until the aggregate value of such power shall equal the cost of the canal and power construction, and after this the United States to receive from the beneficiaries a percentage to be fixed by Congress for the net profits from the water power as compensation for the resulting injury to navigation in the great lakes and connecting waters and loss of power on the Niagara and St. Lawrence Rivers.

The regular board, which reviewed the report and approved it in the main, calls attention to the plan proposed in 1907 by the International Improvement Association of Illinois, indorsed by the governor and the people of the state, proposing a development of 173,000 horse power by diversion of 14,000 cubic feet per second from Lake Michigan. This plan calls for radical changes in the plans of the board of 1905, reduces the number of locks from nine to five, and increases many times the amount of excavation. The opinion is expressed that any attempt by the United States to conserve the power created under these plans, if carried out, would involve the general government in serious legal difficulties.

### Will Ask Billions For Improvements.

SPOKANE, WASH., June 20.—Arthur Hooker, secretary of the board of control of the National Irrigation Congress, will present a resolution for approval by that organization at its seventeenth session in Spokane, August 9 to 14, memorializing Congress to issue 3 per cent gold bonds, running 100 years, to the amount of \$5,000,000,000, or as much thereof as may be necessary, for the following specific purposes:

One billion dollars for drainage of overflowed and swamp lands, thus reclaiming an area equal to 100,000 square miles.

One billion dollars for the reclamation by irrigation of 40,000,000 acres of arid and semi-arid lands, now partly or wholly waste.

One billion dollars to construct and improve deep waterways to develop thousands of miles of territory now without adequate transportation facilities.

One billion dollars for good roads and national highways, for the lack of which the loss to the farm area of the United States is approximately \$500,000,000 annually.

One billion dollars for forest protection, reforestation, and conservation of the forest resources, thus assuring timber and lumber supplies for centuries to come.



FEELIN' FINE.

# DEVELOPING NEW YORK BUILDING CODE.

**Leading Structural Experts Express Unqualified Confidence in Concrete. They All Oppose Limitations As to the Height of Buildings and Indorse Cinder Concrete as the Best Fire Proofing Material.**

The public hearing held by the committee on buildings of the board of aldermen, in the aldermanic chamber, city hall, New York, has been under way since June 2nd. The subject is being given a public airing so that all sides may present their arguments. It would seem at the present writing that the matter will be definitely settled by September 1st, although there is always the possibility of one of the reports being railroaded through. The discussion at times has been rather acrimonious but peace reigns at the present writing and it would seem as if some amicable adjustment of the whole matter would be reached. Both sides seem to be willing to make concessions and no doubt a report will be finally adopted which will be satisfactory to all. Alderman R. S. Doull, who is leading the minority, says that they have learned a great deal about concrete construction and that the arguments on both sides have been instructive. He seems to take a hopeful view of the situation and predicts an early and amicable settlement.

Alderman Kennally has been chairman of the sittings and is the leader of the majority fight. While his rulings have been arbitrary, in most instances, he has allowed both sides to be heard. Ross F. Tucker, who is leading the fight for the concrete men, says they will win out. Not a dollar has been spent by them thus far, as all of the biggest authorities have volunteered their services and time. The fight has been hot from the very start and the public has had an opportunity to hear the opinions of the greatest experts in the country.

The greatest fight has been over the use of cinder concrete and limiting the height of the buildings. The minority code favors the use of cinder concrete, but both limit the height of buildings. Should either report be passed in its present form it would be a blow to concrete construction, but the minority report is favored most by the concrete men, as the lesser of two evils.

We print some of the best arguments advanced on the subject at the various meetings. R. P. Miller, representing the allied real estate interests and the Association of Architectural Engineers, said in part:

I think both reports, the majority and the minority reports, do an injustice to reinforced concrete construction and do an injustice to the taxpayers who should be entitled to utilize that construction if it is for their interests so to do, and I say that it is for their interests so to do. Reinforced concrete construction has been demonstrated to be a thoroughly fire-proof construction. Now, in the matter of the provision for the strength of reinforced concrete construction, I have no fault to find particularly with the recommendations of either the minority or majority reports. The recommendations of the minority report represent more nearly the present day practice.

The minority report is in fact more conservative than the general present day practice, and we believe that these provisions are quite satisfactory except in one particular, perhaps, which I would prefer to submit in a later brief, rather than to speak of it here. However, the injustice done to reinforced concrete lies not in these provisions as to the strength of the construction, but in the restrictions placed upon that type of construction.

Why should there be any such restrictions? You have made very good conservative provisions for the strength of the construction. The construction is undoubtedly fire-proof. Why limit it in any way? Let it go to any limit. The law must be complied with as to the strength of the construction, so long as it is strong enough, what need have we more for restrictions in this construction? I think the minority report represents more nearly present day practice, what is considered good, safe practice. The majority report is rather more conservative, but is more liberal, I will say, than the present requirements.

Mr. Ross F. Tucker, M. Am. Soc. C. E., chairman, Board of Governors, Building Trades Employers' Association: Mr. Chairman, I understand that this present argument is confined to merely reinforced concrete and not to the general fire-proof sections.

Speaking for the concrete industry of this city, I will say that as far as the theoretical restrictions are concerned, it is not unsatisfactory.

The rules laid down for design are not unsatisfactory. The restrictions are unsatisfactory.

I agree with Mr. Miller and I think it is the consensus of opinion of all engineers that reinforced concrete restricts itself by reason of the design you impose upon it in the code itself.

There is not any reason, having fixed the rules of design, why the building should be stopped at 60 feet, 70 feet or 80 feet. As a matter of fact, the rules of design are self-restricting. You cannot go to a twenty-story building in the rules of design laid down in the code. When you go up to a twelve-story you are pretty near the limit, on account of the limit of stresses of the columns laid down in the code.

We object to any further restriction being put on the reinforced concrete than those restrictions of design already stated and laid down in the code.

If you keep to that, reinforced concrete will restrict itself so far as height is concerned.

We have in this city a number of twelve-story buildings. We have got over sixty-five buildings of all types of reinforced concrete in the five boroughs of New York. They have been doing their duty for years and the owners, some of whom are here in this chamber today, will tell you that the condition of those buildings is equal to any other type of construction known and their economy is greater.

The public of New York are entitled to the form of construction, not on a rule of construction, but upon the practice as it has been extended in this city for a number of years.

I think there are more reinforced concrete buildings in the city of New York than any other city in the country. There has never been a failure on record. The buildings have been put up properly and they are doing their duty today under all kinds of conditions.

Furthermore, there have been serious fires, four of which I would like to call your attention to: the Thompson & Norris Building in Brooklyn, the Bowling Green Storage Warehouse in Sixty-eighth Street, the Cavanaugh Building in Brooklyn and the Stolwerck Factory in Stamford. These four fires together are not as great as the fire in the Parker Building, and the cost of repairing the Parker Building would cover the repairs in all four of these fires; a thousand dollar bill would make good all of the damage done to all four of those buildings.

The Chairman: Mr. Richard L. Humphrey, member American Society of Civil Engineers, engineer in structural materials testing laboratory, United States Geological Survey.

Mr. Humphrey: I wish to say first that I appear here by reason of the interests of the whole country on this subject of the New York building code, and because of the interests of the country as a whole, for that reason I feel it is not a local matter.

In the matter of reinforced concrete construction, I think some of the speakers have cited the matter correctly in part, but inasmuch as it is intended to be an improvement over your present code, and inasmuch as you are erecting buildings at the present time of more than 75 feet, and more than 85 feet in height, I can understand by the demonstration before this commission here why it is so surprising that you put an arbitrary limit on 75 feet, which is not borne out by any experience or justified by any test whatever.

It is a matter which is governed entirely by the laws of design, and on that basis it should be permissible to erect a building any height which the laws of design will permit.

I think one of the chief points in favor of reinforced concrete construction is its ability to withstand fire.

I think in the limitations based on it an arbitrary restriction has been made, which will handicap the use of a very excellent material. I believe that the restriction governing the materials that enter into concrete have not been properly prepared.

In the matter of cement, it specifies particularly that it shall meet the requirements of the American Society of Civil Engineers.

These requirements simply stipulate what methods of manipulations shall be used in the making of tests, and contain no requirements as to strength, so that if this provision were adopted there would be no standard requirements for Portland cement to be used in the construction of reinforced concrete buildings, and I believe that would be a decided calamity. It would enable any kind of cement to go in, because under the discretionary powers which it is proposed to vest in the superintendent of buildings, the superintendent of buildings could say just what cement should be used.

Again, in the matter of sand, it is proposed that one of the most vital elements in concrete, the standard is not that it shall be a sand of a certain percentage, but that it shall be no poorer than the standard kept in the office of the superintendent of buildings.

Now, all that should be definite and specified; it would be defined just what grade of sand is to be required, and in the same way just what grade of stone goes into the concrete.

There is just as much latitude in the construction of what you want as is possible now. I believe we know enough about those materials today, and experts have been working on those subjects and have defined what the materials which enter into the concrete shall be, and enable you to specify definitely in your code the question of whether or not certain requirements should be fulfilled.

Again, in the question of height, the reinforced concrete is put on a parity with open construction and non-fireproof buildings. That is manifestly wrong.

Again, in the matter of reinforced concrete partitions, four inches in thickness are placed on the same parity with a four terra cotta partition.

Now, I believe in the matter of concrete and reinforced concrete that you should have at least, in view of its excellent qualities as a material, which have been demonstrated sufficiently to make it a fact—that it should be placed at least on a parity with other materials of construction.

In another thing, I think the committee is not doing justice to that material, and that embraces the unit stress for 1-2-4 concrete at 100 pounds, increasing that percentage of sand by one part and the stone by one part. They make the limit 300 pounds.

Now, to my mind, those very requirements are wrong, because the relations between sand and stone or the gravel which goes into concrete cannot be arbitrarily fixed. They must be fixed in accordance with the void spaces in the materials. If it had said it should not

have more than a certain amount of sand and stone, it would be much better, and I can cite an instance to enforce my point.

I had the proportion of the material 1-2-4, and in order to see whether a better mixture could be obtained, the same grade of material was mixed 1-3-6 and gave 50 per cent more strength than 1-2-4.

Why was that? Simply because the void spaces had been properly filled, and you had a concrete which was more dense and therefore stronger than the other one.

I think in that respect the commission has overlooked one of the most important considerations, and that is the question of density of the material.

The majority report differs from the minority report in that there is probably 100 pounds difference between the strength of the 1-2-4 concrete. In other words, the concrete submitted to direct concussion is 100 pounds less than that provided by the minority code. The minority code fixes the strength of concrete in cross-bending at 640 pounds; the majority code fixes it at 550 pounds.

I want to say in my judgment both of those values are conservative. I believe those stresses are too low. I believe on the basis of compression stresses fixed by the majority code that the cost of concrete building will be increased by the conservative estimate at least 15 per cent, and I do not believe there is any justifiable data for such a position.

I want to cite a question of why the reinforced concrete building after it passes the height of 100 feet—even if you make your columns and girders of steel—why should it be necessary to put in segmental arches any more than it should be for a building under 100 feet in height?

I believe it is an arbitrary assumption without basis on which to make it.

I would not say in my judgment that the minority report is immeasurably better than the majority, but I would still like to make some points in opposition to the minority report.

The Chairman: Mr. Luther Laffin Kellogg, counsel for builders, contractors and users of concrete and cement.

Mr. Kellogg: Mr. Chairman, I represent the general contractors. We are very much opposed to the majority code.

Now, I am not going to discuss the details, but I am going to point out, if I may, some reasons that influence me to think by all means the provisions of the minority report are those which should be adopted.

My chief objection, and I apply it to the subject which we are now discussing, is that this code on certain subjects goes into great detail and minuteness, covering those subjects and making provisions by which they can be adopted, without very much supervision of the superintendent of buildings, and then when I looked into the code and superintendent of buildings, you have got it pretty wide open, and the fact that it is wide open is demonstrated by these different provisions, which give open preference to certain classes of materials and open preference to certain patents and certain architects which are unknown, and we will say to the superintendent of buildings, "Here are specifications for these and you must use them." A very daring piece of business to put through a code with such provisions as this.

Object to it because it puts a number of trades and occupations practically out of business in the city of New York. That is what it does, and it is a serious business.

The Chairman: Professor Ira H. Woolson, adjunct professor, civil engineering, Columbia University. In charge for twenty years of testing material laboratories. Chairman Committee on Fire Resisting Construction, American Society for Testing Materials. Official representative of New York City to the International Fire Prevention Congress held in London in 1903.

Mr. Woolson: Mr. Chairman, I have a desire to protest against the enactment of this majority code upon the broad principles that the code does not properly safeguard the public welfare.

In the first place, there are restrictions in the provisions of the code limiting the use of reinforced concrete in its various forms, which prevents the use of one of the safest and most economical materials in the protection of life and property in the case of fire.

It has been my good fortune in the past two years to have made fire tests upon a very large number of methods of fire resisting construction. I think that I may say that I have made more tests of that kind than any other man in this country, not because I was better qualified to conduct them than other men, but because I happened to make a specialty of this particular subject at an early date and was fortunate in being located in this city where ten times as many tests have been made upon fire resisting construction under the direction of the Bureau of Buildings of this city than have been made in all the other cities of the country combined. For these reasons it has been my privilege to have conducted over sixty full size building construction tests, either floors or partitions, besides a large number of laboratory tests, and I therefore feel that I may speak on this subject with a certain degree of confidence as the result of a rare opportunity for experience.

The greatest horror of which we can conceive is an uncontrolled fire, and it is a travesty upon our boasted civilization and much vaunted scientific attainments of the age that our annual fire losses in this country are counted in untold numbers of human lives and hundreds of millions of dollars of property.

It is your duty as officers of this great city to provide a building code which will protect the ignorant and the helpless (as well as the wise and the wealthy) to the greatest possible degree.

The proposed code is so framed as to exclude the use of cinder concrete in building construction, and very largely prohibit the use of stone concrete, due to specifications of weight and height of buildings, etc.



As a result of my years of experience in testing these materials (as well as others), I am positive these restrictions are wrong and unjust.

Well proportioned and well placed concrete is a most excellent fire resisting material, and in my judgment a first class cinder concrete, properly proportioned of cement, sand and good furnace cinders, is the very best fire resisting material of which I know.

There have been made in this city and vicinity in the past ten years twenty-five fire tests upon full size floors of reinforced stone concrete construction; eighteen of these, or 72 per cent, were successful. There have also been thirty-nine similar tests upon cinder concrete construction, and thirty-three of them, or 85 per cent, were successful.

#### FIRE TESTS ON FLOORS.

Kind of construction.	No. of tests made	Success-ful.	Fail-ures.	Uncon- tain.
Stone or quartz concrete . . . . .	25 (18 I. H. W.)	18 72%	5	2
Cinder concrete . . . . .	39 (16 I. H. W.)	33 85%	4	2
Slag concrete . . . . .	3 (2 I. H. W.)	1	2	
Terra cotta . . . . .	9 (1 I. H. W.)	7 77%	1	1

I presume that the importance of those tests is not fully appreciated until you take into account the severity of the tests.

The tests at the present time in this city require that such materials shall stand a fire of four hours at an average temperature of 700 degrees Fahrenheit, and water shall be applied for ten minutes against the red hot structure.

Now, that is an awful test. It is a very severe test. I do not think it is too severe, because we get plenty of material that will stand it. Nevertheless it is a very severe test and when any kind of construction will pass through that fire and that application of water and then when fully cooled will stand a load of 600 pounds per square foot, instead of the specifications, it is a very excellent material.

The cinder concrete which I spoke of, 85 per cent passed that specification, and they were not all 1-2-4, some of them were 1 cement, 2 sand and 5 cinders, and some were 1 cement, 1 sand and 6 cinders, and even as low as 1 cement and 8 cinders, about as bad a thing as ought to be allowed to go into a building, even if used for filling on floor construction.

But, strange to say, I have a record of two tests where a 4 and 5-foot slab passed that specification of test, so it shows it is a good material.

Where very heavy loads are not required on floors, good cinder concrete makes a light, economical and thoroughly fireproof construction, and it is unjust to the public and to the builders to prohibit its use.

In this connection I would like to say that I have your specifications for a test sent out to test these materials and it is very faulty, and with your permission I would like to submit a brief as a result of my experience on this subject in order that those tests may be carried on successfully.

For these test buildings we have tried bricks many times. Brick lined with cinder concrete three or four inches thick and cinder concrete buildings we have also tried, and as a result of having built several of these buildings I have arrived at the conclusion that the only and best material to use for a building of that character is the cinder concrete building, and I have here with me photographs (producing photographs and passing to the committee) showing the character of a test house that I recently built, which is a duplicate of one which I had used for twenty-eight hours of testing, and I have photographs of the building which I used for firing for twenty-four hours at temperatures varying from 700 to 2,000 degrees, and the walls were in good condition.

I had to remove from the walls what was burned, perhaps one inch or one and one-half inches on the inside, I had to remove it, and it cost me two or three hundred dollars to remove it and get it knocked down and out, and when I wanted to repeat the building the second one is identical with that one. I have photographs showing the condition of those walls after twelve hours, twenty hours and twenty-four hours of firing, with water applied at the end of every twenty-four hour test.

My attention is called to the fact that the American Society for Testing Materials has adopted a standard specification for all such testing materials, and if I may be permitted I will submit a copy of it. It may be of some assistance to you.

I would like to call attention to another test, and that was a test conducted in 1903 in this city in the Butterick Building, a fifteen-story manufacturing building downtown, which you all know.

I had occasion on account of some controversy which arose to go into that building after the roof was practically on and went up on to the fifth floor and constructed a test house in this building running from the fifth floor to the sixth floor, knocking holes in the walls and using them to make chimneys to carry the smoke to the outside, and we conducted a fire in that building underneath one of the main girders and the cinder concrete floor for two and one-quarter hours, the temperature varying from 1,000 to over 2,000 degrees, and there was no injury whatever to the floor or to the beams, and they plastered them and went on with the building, and it is as good today as it ever was.

I doubt if such a test was ever made before, and yet that is the cinder concrete which you have condemned as a fire resisting material.

As I say, where heavy loads are not required on floors good cinder concrete makes a light and economical and thoroughly fireproof construction. I believe the design entirely controls the height of those buildings.

The best fire resisting material used in construction today is cinder concrete without any qualification. I would favor the minority report, although I do not approve it. There are some good points in it. In conclusion let me say that if you enact a code which by prohibition or restriction clause prevents the free use in building in this city of one or more well recognized fire resisting materials, you will be doing an injustice to the owner and the builder, because you will increase costs of building and prevent competition, which is always a stimulus to good construction. By doing this you do a wrong to the public (the men, the women and the helpless children), who must live in these buildings, and who are entitled to the best protection which the science of building can give them.

The Chairman: Professor C. L. Norton, associate professor, Massachusetts Institute of Technology. In charge of heat measurements and fireproofing materials; member American Academy of Arts and Sciences; engineer of Insurance Engineering Experimental Station.

Mr. Norton: Mr. Chairman and Gentlemen, I am

representing first the public, which are concerned with the standardization which the New York building code attempts to make, because of the importance of everything which bears the stamp of the New York building code upon it, such as materials which have to go to every part of this country and Europe. People who live in buildings are much interested, exceedingly interested, in the New York decisions of this board upon these materials which must be final everywhere.

For the last sixteen years my hands have not been free from the burns of fire tests or the pains of Portland cement. I am an associate professor in the Massachusetts Institute of Technology, in charge of heat measurements and fireproofing materials. I am there to know and teach something about heat and fire and fireproofing.

In connection with that all these fireproof men for the last ten years have been talking about the sort of thing that is here to be discussed, reinforced concrete.

It is a fireproof substance which is under discussion, and to attempt a diversion, as some of us have tried to do, between reinforced concrete and fireproofing is a little bit artificial, and I will try to confine myself in the ten minutes which are allotted to me to this question of reinforced concrete in respect to its fireproof qualities.

As to the height, first, I believe as most of the speakers who have talked upon this subject do, that this is very largely self-limiting, the cost and size and so on of concrete construction—if you want precisely the details as regards strength provided for by this code—that will limit practically the size and height to which you may carry these buildings.

As Mr. Humphrey has said, the specifications regarding the materials are indefinite. We should have something definite about the cement, something more definite than is provided for in the code. We should have something much more definite about sand and about the aggregates.

The code is indefinite, and I question even with the best of building experts there might not be a very clear possibility of misunderstanding, and to a certain extent some faulty construction through its miscomprehension.

We need all details of sand and the aggregate both of stone and cinders.

The question of fireproofing reinforced concrete, to my mind, stands just here. It is permanently in a class by itself. With the proper reinforcement, with Portland cement, concrete gives you a thing to build with such as is not known in any other way.

The question whether this should be sand or cement had been open to discussion, and I take the position of one of the previous speakers that there is a certain value in building the floor arches which contain both metal and concrete—that is, reinforced concrete—and I say, therefore, with the permission of the chairman, I will take the liberty of saying a word about that.

Concrete is the best fireproof material if it is under the structural work, and I will say that of the two I consider cinder concrete to be much the best. I have tested houses that have been built over and over again—that have been built of cinder concrete. They have been burned and sowed with water, and they have stood the test.

Brick used for buildings is a thing of the past. But the concrete cinder is there and it is a good thing.

If you heat concrete the heat goes very deliberately through the concrete. It is a poor conductor of heat; consequently you have got to dry out the chemical of the concrete, which takes a great deal of time, a thing which in the modern construction and with your fire department, which can get to the scene so quickly, is a considerable factor.

We burn these test houses ten or twelve hours sometimes, and in any of your buildings here a fire of ten or twelve hours in any one portion of any one building will be a very rare thing.

If I desire to use any material of the concrete type, for instance, or of any type, to give me the most excellent fire resisting structure, I should unquestionably use the cinder concrete, not the arbitrary mixture of 1 to 8, which is undoubtedly bad, but 1-2-5. It may be bad in some instances, but by such a proper proportioning as may be necessary it will give you an absolutely dense sound concrete.

I have tested these beams with a view of seeing whether they are going to be permanent. Your reinforced concrete is of very little value if it is going to fall down or rust or something.

I have made innumerable tests, going back about fifteen years, and keeping them going day and night, to see what this reinforced concrete was going to do to steel work.

It is said that cinder concrete was very bad, but I have not found it was except where the cinder concrete was defective, in that it was porous. If it is sound and strong and dense, it makes very little difference whether sand is used or gravel or broken stone or cinders.

Under two sections of this code, in reference to concrete, it is conspicuous by its omission in connection with elevator wells and partitions, and if the chairman will let me say two words, since these are reinforced concrete partitions, and column coverings, and so on, it would seem to me a grave omission to allow this code to go on in its present condition without substituting at least upon an even basis the protection of columns and the construction of partitions and elevator enclosures of the most excellent fireproof material of which we know, that is concrete preferably, to my mind, cinder concrete.

The reason that the cinder concrete is better for these things is that it does not expand so much and does not fall down. Any of these materials expand with heat, brick, terra cotta, concrete of any kind; they do not go to pieces under the ordinary heat but they expand, they buckle, and it is there that the reinforced concrete, the steel which goes through the concrete, giving it a tensile strength, with good work behind it—it makes expansion matters of indifference, and if the column expands it does not fall down. If your elevator well expands or warps a little, it gets out of plumb a little, but it stays there and does not let your fire through from floor to floor, as almost every other kind of construction is liable to do, at least in comparison with the reinforced concrete.

These are the points which have come home to me most strongly, and I wish to urge that you will consider that I have been experimenting personally for the prevention of the loss of life and property by fire ever since I got out of school, and have devoted the major portion of my time to that one thing, and these remarks are the result of that experience, and I urge you strongly that the decision of this board upon the subject of fireproofing

is going to be felt even far beyond the city of New York and far beyond the city where I live, and throughout the country, and it carries a weight which these dignified gentlemen can hardly appreciate with not only the owners, the engineer and the architect, but everybody else.

The Chairman: Do you believe that there ought to be any restrictions put on reinforced concrete?

Mr. Norton: I do not. I think it should be stated what composition gives you a sound dense concrete, and not ten barrels of sand and half a shovelful of cement.

The Chairman: Mr. Henry W. Hodge, member American Society Civil Engineers, consulting engineer of Boiler & Hodge.

Mr. Hodge: Gentlemen, I have not prepared any written statement or remarks for this board.

I simply want to say that I have been engineer for between three and four hundred structures in this city of New York during the last nineteen years, and have included in my engineering the two tallest buildings in this city.

I think I was the first civil engineer in the city to recommend my clients to the use of cinder concrete.

We put it in the Bowling Green Building in 1895. It was then a great novelty, not having been seen in reinforced concrete buildings before. That building has been a huge success, and since then the use of cinder concrete has come in very generally.

I have used it in a large proportion of the building of which I have been engineer, and when I say that I have used other materials I have used terra cotta and I have used plaster of paris and metropolitan flooring. I have used all the floor systems, but in my opinion, based on the experience I have had in the last fourteen years, and in the factory tests I have witnessed, which are a large number, I do not think there is any fire resisting material in the world which equals cinder concrete in floor construction, and I would further recommend it for partition construction. I think I would favor the minority report.

The Chairman: Mr. Tucker, your name appears upon our program as a member of the American Society of Civil Engineers, and president of the Concrete Association of America.

Mr. Tucker: Yes, I want to say a few words with reference to the Building Trades Employers' Association.

That association, as you know, simply represents a thousand firms and corporations engaged in building interests in this city, with an invested capital of upwards of twenty millions of dollars.

The sections of this code are extremely detrimental to the building interests of this city, and we regard your honorable body and the architects and the Building Trades Employers' Association as charged with a public duty in the construction of buildings which affect the lives and property of four million of people who cannot read this code with intelligence.

Now, sir, we charge that in the formation of this majority report you have eliminated construction which is manifestly good. You have provided for construction which is manifestly subject to criticism.

If you want the details of these cases which I mention I am prepared to give them to you, but we do not wish to narrow this thing down at present to the details of the code.

As a member of the Building Trades Employers' Association we believe this code ought to be taken up section by section, and in a careful and thorough manner, because, sir, as that code is written today, it is so arranged that it will cost the building public of this city five hundred thousand dollars a year for not one bit better construction than they are getting now. (Applause.)

That, sir, is a serious responsibility for this honorable body to consider, and that is the fact that is written all through that code, sir, as it stands today, and it certainly behooves the technical organizations of this city to notify the investing public of these facts.

The investing public depends upon the technical organizations of this city to protect them in the safety and construction of the buildings in which they live, in which they have their several employments, and in which they gather together for their amusement or their education.

Now, the document as it stands there, sir, is full of points that are open to the widest criticism.

You have here in this room men of the highest standing in the technical professions, men who have given their lives to the testing of materials, and I have yet to hear, sir, that the Building Code Revision Commission has called one of those men before it to get at the facts that should be incorporated into this code for the benefit of the public of this city.

Therefore, on general lines we believe that these hearings should be held exhaustively.

Alderman Colgan: Have you estimated the increased cost if this majority was adopted against the minority report?

Mr. Tucker: It is this way: the present type of fireproofing material, cinder concrete, which has been used on millions of feet of floors in this city may be rated at approximately 18 cents a foot.

The price of other forms of fireproofing, particularly terra cotta, may be rated at 19 cents a square foot.

If this code goes into operation you will eliminate what your experts here have told you to be the best fireproof material known and you substitute a kind of concrete which is of less efficiency in fire resistance, a kind of concrete that will cost in the specification as you have written it down there 25 cents a foot, and the alternate for that is some type of fireproof construction that you get now for 19 cents.

What is going to be the result? Simply that the kind of fireproofing you get now is going to be sold to the public of this city for 24 cents, and the investing public are going to pay the difference, and they won't get as good protection under this majority code as they are getting under the present code.

Cinder concrete is rated 90 pounds to the foot, and your code calls for stone concrete at 135 pounds, or an increase of 70 per cent in weight.

Now, on a twenty-story building you bring that weight; what does it mean to steel structures? It puts you out of competition. You have got to put into your buildings the kind of fireproof construction you have got in the Parker Building.

Now, if the people of this town want to pay the difference of the kind of construction put into the Parker Building make this code a law. (Applause.)

Mr. Robert W. Lesley, associate member, American Society of Civil Engineers, vice-president American Society for Testing Materials.

Mr. Lesley: Mr. Chairman and Gentlemen, it seems to me that it is rather an important thing, before the



city of New York attempts to exclude one form of construction and insert another form of construction, by making the first form so expensive that it cannot be used.

That might be proper, but in the face of what has been stated here today by the best experts on that sort of material, all of whom have expressly stated by reason of many, many experiments that cinder concrete is the best fireproof material, I say it is not the best thing to exclude, by direction or by indirection, a material of that kind which makes the cost of the dwellings of New York, of the factories of New York, of the theaters of New York, and of the halls of New York and the business buildings of New York more expensive by the exclusion of a material of that type.

Now, I want to say another thing. We have heard here that concrete is a building material, and I think no one denies it.

The output of Portland cement in the United States in twenty odd years has grown from about 50,000 barrels to 50,000,000 barrels. That does not look like a decadence and falling business of building material.

Now concrete, I don't know whether you are all familiar with it, but concrete does not just grow when it is brought on the building, like a beam or another material, but concrete is composed of three different elements, sand, stone and cement, which are mixed with water and placed between girders of the floor, the beams of the completed buildings, or the walls in some cases, where it is used as a curtain wall.

Now, would not it appeal to you all in considering this new building material, and in discussing these two codes, the majority and minority, if this state of fact appeared?

I find that cement is to be tested by a specification that does not exist at all. I refer to the specifications of the American Society of Civil Engineers, which is mentioned in the majority code.

I say so far as the making of tests is concerned it is absolutely in the power of the superintendent of buildings to decide what the tests shall be.

Now, was that an accident alone? Did it compose of sand and cement—referring to the code, page 445, the matter of sand is left to the discretion of the superintendent of the building department; no requirements, no specifications and no tests for sand, but simply left to the judgment of the superintendent of the building department.

Now, again, stone is another material. I find on page 446 no standard for stone whatever. Again it is the judgment of the superintendent of the building department.

Now, I say that there are three important materials entering into the construction of the well-known building material called concrete, and none of them have a specification; it is all left to the judgment of a single man, good though he may be.

Now, what was the result in the minority code? In the minority code, on the heading of "Cement," there are more than three pages of printed specifications, and the city and the contractor, and the man who uses the cement and the man who supplies it, knows definitely what the requirements are.

Again, taking the question of sand, there are absolute requirements as to sand, definite specifications specifying an amount that must pass through a certain screen, and more than that, the sand is followed into the mortar, and the man who does the mixing of this good sand with this good cement in wrong proportions is again exposed to the inspector coming and taking a test of this mortar, which must be showing a test of 75 per cent of sand and cement in the original specifications.

That is, the interests of the public are safeguarded. Again, in the question of stone, every single screen through which this is to pass the character of the screen and everything is all mentioned.

I say that as between these two reports, in the handling of the prime ingredients of material to which the lives and property of the city of New York are going to be entrusted, not to have a single specification governing it—I say that is a serious detriment, and it could not have been an omission. It could not have been an error.

Why, gentlemen, if you go over that specification with a fine tooth comb, you will find they found it was perfectly possible to specify steel and iron. In point of fact, when you come to the serious matter of protecting the citizens of New York by the painting of the materials, the iron and so on, they can describe in absolute words a well-known thing.

That could not be an error. The details were looked after and the details were not looked after in a way that the citizens should expect a committee looking after their lives and looking after their property as doing their duty to have looked after them.

The Chairman: Mr. Fred G. Webber, president Masters' League of Cement Workers.

Mr. Webber: Mr. Chairman and Gentlemen, representing the Masters' League of Cement Workers of the Building Trades Employers' Association, I appear here to protest on behalf of that organization against the passage of this code, so far as it relates to reinforced concrete, in that it restricts the height of a building to 85 or 75 feet.

You have heard from your engineering experts present this afternoon of the various good qualities of concrete, and from several directions, and we want to ask you to look carefully around the city of New York at the buildings that have been constructed of this material, and to sum it all up have approximately 10 per cent of those structures that are under 75 feet. The balance run from that to 150 feet in height.

We ask that the code be so worded that we can continue to build buildings of that material to the limit of their construction.

If you will allow a building of first-class construction to be erected to forty stories or sixty stories, we want to get the same, if it is a possible thing, and that will be a matter that will be regulated, as has been told you by your engineering experts present here.

As far as the fire possibilities of a structure twenty stories high are concerned, you get no more fire at that height than you do at ten or eight or six stories.

You have thoroughly taken care of that end of it by standpipes that are operated from the street, so that that will protect the structure, but the structure needs no protection; it is the goods in the structure.

Now, if a man wants to buy a necktie, he buys it where he gets the most value for his money. If a man wants to build a building that will reduce his insurance rate one-half, and in some instances more, don't handicap him; let him do it.

The organization that I represent in this industry is

perfectly competent to put up structures of this material. You cannot point to a failure up to this present day in New York City.

Your code in other respects is fair. It is a very, very conservative code.

We ask in that respect that the measure of protection to our reinforcing bars shall be no greater than you give to other fire protecting materials, such as tile, for instance. We want the same measure. We ask for no more, although the day will come when you will readily grant it.

The chairman a moment ago, I believe, asked the assembly here what organizations would be affected or put out of business if this majority code goes through in its present state.

Assuming that my statement that there were 10 per cent of the buildings being constructed, or have been constructed to a height of 75 feet, it still remains for us to do 10 per cent of the business of the future. That puts 90 per cent of the contractors out of business. It puts 90 per cent of the labor organizations affected by the use of this material in this industry out of business, and there are approximately 15,000 members.

Ninety per cent of those members go out of business.

Before we undertook to put up this building we went to Professor William H. Burr, whom the city employs as its structural specialist, through the building department, and asked him to design that building for us.

Professor Burr took the matter into consideration and recommended us to put a reinforced construction, stating that was the best building for our purposes.

The building is about 125 feet by 100 feet, and nearly 150 feet in height. Absolutely no restriction was placed on Professor Burr in designing the structure himself. He was told to give us a building which would be just as satisfactory as possible for a printing office building, and at the same time would be in keeping architecturally with the Times Square section, because we wished to have an appropriate building in that vicinity, naturally.

That building has since been completed and we have now occupied it for two years. It is extremely satisfactory. The building in every way is entirely satisfactory.

Now, that building is not large enough for our purposes and won't be very shortly, and we have got to enlarge it. We expect we shall have to enlarge it.

Now, under this proposed code, gentlemen, it is absolutely impossible for us to put up an addition to that building like what we have, and it is a very serious proposition for us to have to put up a little detached building and not structurally as good as the one we have, and in no way so well fitted for our uses, and this proposed building code, through its limitations to the height of reinforced concrete construction, absolutely knocks us out from duplicating any portion of our present very satisfactory structure, so all we ask, gentlemen, is that you will eliminate that restriction as to the height of reinforced concrete.

The Chairman: What is the height of the building now?

Mr. Goodell: Nearly 150 feet.

The Chairman: What is the address?

Mr. Goodell: 231 to 241 West Thirty-ninth Street, the McGraw Publishing Company.

The Chairman: Mr. Albert Southard Wright, of the firm of Parsons, Closson & McVaine, representing the Keystone Fireproofing Company and the United States Gypsum Company.

Mr. Wright: I appear for a company who are the manufacturers of a special sort of fireproof material, the Keystone Fireproofing Company and the United States Gypsum Company.

The particular material that they use in the manufacture of their products is gypsum, and that substance is not included in the list of materials permitted by the proposed code.

Therefore, whether or not they are to be allowed to continue in business and use gypsum lies wholly through another provision of the code, in the discretion of the superintendent of buildings.

The Chairman: Mr. John M. Goodell, representing the McGraw Realty Company.

Mr. Goodell: Mr. Chairman and Gentlemen, we put up a reinforced concrete building on West Thirty-ninth Street. Our company is a realty company, which is owned in turn by publishing companies.

Mr. W. P. Anderson, a reinforced concrete engineer from Cincinnati, Ohio, will be heard now.

Mr. Anderson: I have not read the Code very thoroughly, so am not prepared to speak on all the portions of the Code.

The only part I wish to touch on is the height. I am connected with a contracting firm who make a specialty of reinforced concrete. We have never done any work in New York, but we have done it pretty well over the country.

We built a reinforced concrete building in Cincinnati with absolutely no structural steel, that was over 200 feet above the sidewalk.

In Seattle, Wash., we built buildings over ten stories high. In Dayton, Ohio, we built a building over ten stories high.

At the present time in Montreal a building is being erected which was designed for a ten-story building. They are going to erect five stories at the present time.

We are building at the present time a building in Kansas City which will be twelve stories high.

These are just from memory; I have not got any records with me or I would give you a lot more, because we have built a number of buildings for occupancy in a number of different cities, and I see absolutely no reason why the height of a building should be limited in any way in the Building Code.

The height only depends on the size of the columns, on what the size will be when the building goes up to such a height that the column is of such a size that it interferes with the use of the building, but there is not any reason why it could not be put up for any height, and I think it is absolutely foolish to make any provision limiting the height to anything that would be less than that which would be allowed in other forms of construction.

The continuation of the meeting held June 9 brought out further discussion along the same lines. We print excerpts from some of the opinions:

Ernest Flagg upset Alderman Kennelly and the signers of the majority report by savagely attacking their report. Several times they tried to head him off, but he insisted on speaking, and as Alderman Doull and most of those who filled the chamber were on his side, Mr. Flagg was allowed to have his say.

"This new code," he said in the course of his remarks,

"In some of its most important features is based neither upon common sense nor justice. It is not just because it favors special interests and it lacks common sense because it puts obstacles in the way of a superior form of construction and encourages the shutting out of light from the streets and buildings.

"When I read that certain walls must be six inches thick if of reinforced concrete, and only four inches thick if of terra cotta; that with reinforced concrete beams must not be more than five feet on centers; that columns and girders of reinforced concrete can only be used in buildings less than 75 feet high; that reinforced concrete slabs can be used in buildings less than 100 feet high and that cinder concrete is prohibited for floor arches, I know that something is wrong, radically, flagrantly wrong. People who draw up such a code as this lay themselves open to the suspicion that they have other interests at heart than those of the city.

"I have said that the proposed code lacks common sense. In this country we use too much wood in our buildings. We are cursed and we always have been cursed with an epidemic of fires; the loss of life and property due to this cause, yearly, is appalling. One would think that in framing the building code the chief aim would be to overcome this great defect; and one might also suppose that even a child could understand that the way to do it is to encourage fireproof construction by making it as cheap and easy to use as possible. Instead of doing so, the new code would make it unnecessary, and so hard to use that wood would still be preferred.

"It might sound well, if the best methods had been specified, to say we will permit only these, even if they are the most expensive; and to the layman the argument might appear convincing; but I say we do not need the most economical methods. We need methods which will make non-inflammable construction common.

"In the next fifty years the city will be practically rebuilt, a vast area of surrounding country will be covered with new buildings, and it depends upon the building law as to whether this will be done in a fireproof or in combustible way. I maintain that true policy requires that every possible encouragement be given to fireproof construction which can be given to it with a reasonable degree of safety. What if the buildings are not all of the highest type? They will nevertheless be better than inflammable structures. Every stick of wood which can be eliminated from a building is so much clear gain to the best interests of the city.

"I have often been impressed by the economical methods used in European cities. If our building law permitted the same economical use of fireproof materials which is allowed in Paris, for instance, there would be little object in using wood. I have seen steel floor beams go into buildings in that city of so much lighter section for the span than they could be permitted here that I have wondered that they could do the work, yet I venture to say that no one here has ever heard that French construction is poor. The French are past masters at building. What we all have heard is that fires are as rare in Paris as they are frequent in New York. The beams I speak of were cambered up in the middle so that when the weight came upon them the deflection would make them fairly true. We specify beams of such strength that there shall be practically no deflection even if loaded with a weight which they will receive, but which the law says they must be capable of withstanding."

Mr. Flagg proceeded further to denounce what he called the wasteful policy demanded by the building laws of the new code. He contended that the board of examiners should be made up of architects chosen from the best men in the profession; that their term should be limited to one year, and that they should be selected not by the American Institute of Architects or any other private body but by the mayor. The present tendency was to a board made up of representatives of special interests. In winding up his condemnation of the proposed code, Mr. Flagg asserted that if it should become a law it would be a "monumental piece of folly and stupidity."

### Surfacing Concrete.

The most common defects in the finished surface of concrete masonry are discoloration, scaling and hair cracks. Discoloration may be due to the use of different brands of cement in the same wall, to a lack of uniform color of the sand, to the concrete being non-homogeneous in mixture, or to the use of neat cement mortar paints. Scaling is due to the plastering or painting of the wall with a rich or neat mixture. The fretwork of fine cracks is due to the common practice of using a cement mortar facing against the face forms. The appearance of these cracks is readily explained by the fact that the amount of shrinkage of concrete in settling is less than that of cement mortar.

The following method of surfacing concrete should eliminate all of these defects and give a smooth and durable finish. Prepare a smooth and tight form, oiled and in accordance with the usual instructions. While laying the concrete pry back the body mass with a flat-bladed tool. This is not for the purpose of forcing the mortar to the front, as is sometimes supposed, but to prevent the arching of the stones against the forms and the production of voids in the surface. A convenient tool for this purpose is made by welding a piece of steel plate to a rod. After the concrete has attained a consistency which will allow of the removal of the face form, but when it is still green and tender, go over it with a calcimine brush and plain water until the marks of the forms have been entirely removed. When the masonry has hardened the surface may be rubbed smooth with a carborundum brick or a briquette of cement mortar. It is important that the concrete be kept damp during the process of setting; otherwise the surface may dry out and leave insufficient water for crystallization. This may be done by covering the masonry with a wet tarpaulin and keeping it damp.—*Canadian Contract Record.*



## The National Builders' Supply Association

Meets Annually.

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Official Organ, ROCK PRODUCTS

### The Ohio Builders' Supply Meeting.

President Frank Hunter, of the Ohio Builders' Supply Association, advises us that the summer meeting of that association will be held on August 13 and 14 at Cedar Point. The program for the meeting has not yet been arranged but will be at the meeting of the executive committee. It is not necessary to say that it will be a good one and a rousing good time can always be had at this popular resort on Lake Erie. The full program will be announced in the July issue of ROCK PRODUCTS.

### We Sell Through the Retailers Only.

From the day that Adam started in the lime and cement business to this morning there has always been more or less difference of opinion as to the best method of handling material from the manufacturer down to the consumer.

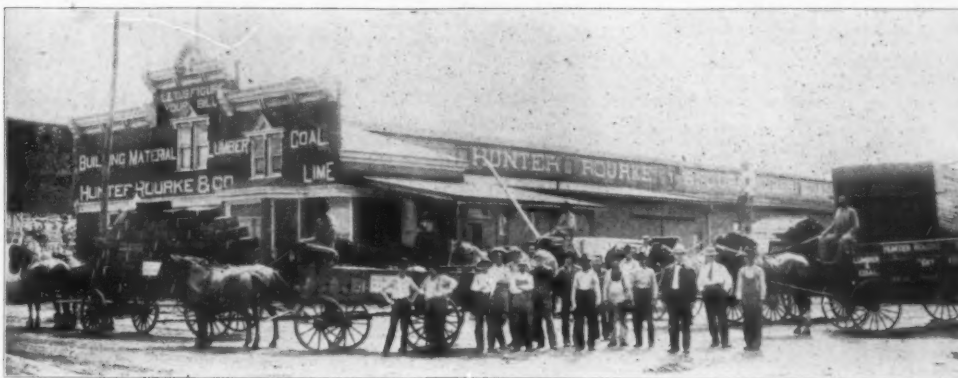
There has never been that proper method in the building material business that there should be, because the organization of the trade has not reached that perfect stage where they have had full control of the situation. The strongest influence towards this is, and has been, the National Builders' Supply Association. It has had its weak points, but the good accomplished so much overtopped the little inconsistencies that there is no man in the building material business, be he builder or retailer, but can afford to give it that moral and financial support which any strong organization is entitled to.

Without this organization operating up to its highest standard you cannot expect, Mr. Retailer, to get to that point where you will have the complete co-operation of the manufacturers, because in "Unity there is strength," and if you and your neighbor can work in harmony you will find it very easy to be in harmony with the man who manufactures the goods.

He naturally would rather do business through the dealer, but the dealer gets his brand of cement on the market and then expects the other fellows to sit still when they need the business. Therefore, this whole association idea is rooted and founded on "Reciprocity."

It is very easy to bring about this bettered condition in business, but it requires the individual co-operation of the retailer and the friendly backing up of the manufacturer. The efforts of the National association at this time are largely toward the desired end, but the manufacturer and the dealer must not expect the president of the association, the executive committee, the vice-president and the secretary to accomplish this condition without sending in their application for membership.

The association will not exist if the men who are to gain the benefit do not lend their co-operation.



WAREHOUSE AND OFFICE OF HUNTER, ROURKE & CO., URBANA, ILL.

We all know that in prayer meeting there are about three men and thirty women. We also know that national and state organizations are largely handled by a few people, because the others are only passive members—which means that they attend the association once a year, and then only when somebody steps on their toes. We have known retailers who never pay dues to be so inconsistent as to claim the protection of the association.

The maximum collection in the National association is two hundred per month. If this organization is not worth that much money, it is not worth anything at all. It can be made a hundred times as valuable as it is today, providing you will take your pen in hand and make out your application and help to back up the efforts of this association, which means the development of the principle, "We sell through the dealer only."

### Will Furnish Building Material For New Coliseum.

The Des Moines Building Material Company, Des Moines, Ia., will furnish the lime, cement, stone, rock and sand to be used by the Gray Construction Company, of St. Louis, in the construction of the Des Moines Coliseum. The contract amounts to \$49,000.

### Change of Firm.

E. P. Humphreys has sold his interest in the firm of Kerr Brothers & Humphreys, dealers in grain, coal, wood and concrete blocks, Bellefontaine, O., to his partners, Harry S. and A. R. Kerr. The change of the firm will be made July 1 and Mr. Humphreys expects to enter another business.

### New Incorporations.

The South Ozone Park Lumber Company, Borough of Queens, N. Y., has been incorporated to deal in wood, lumber, brick, cement, etc. Capital stock, \$10,000. Incorporators: Ernest J. Stranack, Richard H. Ashby and Edward A. Horan, Jamaica, L. I. The Crickenberger Lumber Company, Westfield, N. Y., has been incorporated to deal in lumber, brick, stone, etc., with a capital stock of \$50,000. The incorporators are: C. Crickenberger, H. Crickenberger, Westfield, and G. Reusch, Granford, N. Y.

### F. J. Morse & Company.

Fred J. Morse, who for a number of years represented the Sandusky Portland Cement Company in Chicago, has severed his connection with that company and has organized F. J. Morse & Company. The company will deal in Portland cement, sand, gravel, brick and represent the Clawson-Hamilton Company, Inc., of New York, manufacturers of waterproofing and artistic colorings of stucco, concrete and brick. The offices of the company are 1311 Chamber of Commerce Building, Chicago.

### Large Retailers of Urbana.

Hunter, Rourke & Company, of Urbana, Ill., have a large business at that place. The picture of their place shows but a small part of it. The offices and warehouse are in this building. They have another shed, larger than this one, besides a piling room without shelter for lumber. In all the plant covers a little over nine acres. They also operate a planing mill. In the line of builders' supplies they handle St. Genevieve lump lime, Huntington hydrate, Lehigh and Universal Portland cement and Agatite and Plymouth plaster.

Writing us regarding trade. They say:

While we have a nice lime and plaster business,

we do not handle the amount of cement a yard of this size should. This is largely due to the fact that a great many of the manufacturers see fit to ship any one who can possibly use a car, or make one up among themselves and neighbors. We have an instance across the street of cement being sold to a man at not over five or ten cents profit by a cement block maker, who bought a car. This was done in spite of the fact that the cement manufacturer has a regular customer here buying a great deal more than the block man.

Business so far this year has been good. The prospects for its continuing are not so bright.

### General Offices Moved.

The North Shore Fuel and Supply Company, which has retail builders' supply yards in the northern suburbs of Chicago, have moved their offices from Chicago to Lake Forest, Ill. John Griffith has been elected president of the company, to succeed E. C. Price. The company has yards at Winnetka, Glenview, Lake Forest and Waukegan, Ill.

### Increasing Capacity.

GALLIPOLIS, O., June 5.—George H. McCormick, Son & Co. have been obliged to increase the capacity of their plant, owing to the demand for drain tile and brick in the vicinity of Gallipolis. The works are located one mile east of Gallipolis, on the Hocking Valley Railway, the Kanawha & Michigan Railroad and the Ohio River, so that the shipping facilities are excellent.

The tile and brick manufactured at this plant are made from a clay vein which is thirty-five feet thick and only requires the removal of ten inches of loam on top and is almost free from stone and pebbles.

For the past two years they have not made half enough goods to supply their trade, so they have trebled their capacity. A dry kiln equipped with cars and using waste heat has been installed. The clay is of such texture that it will stand the immense amount of heat as soon as it is made, enabling it to have retail builders' supply yards in the northern dry in twenty-four to thirty hours.

Up-draft kilns are used. The officers of the new organization will be George H. McCormick, president and general manager; Frank E. Hutinpuller, secretary-treasurer, and C. J. McCormick, who for the past five years has been with the Cleveland Builders' Supply Company, of Cleveland, O., sales manager.

### OBITUARY.

Henry M. Schmoldt, of Beardstown, Ill., died suddenly at his home on June 18, 1909, aged about 50 years. For many years he has been actively identified with the progress of his native city, having served as mayor several terms. At the time of his death he was president of the State Bank of Beardstown, and an extensive dealer in lumber and the full line of builders' supplies, in which business he had been engaged from boyhood. Until the last two years he has associated with his brother, Adolph E. Schmoldt, under the firm name of Schmoldt Brothers, in the timber and stave manufacturing business in connection with the lumber and supply lines. He was an affable and courteous Christian gentleman, successful in all his undertakings, having amassed a very comfortable fortune, beloved in his family circle and respected and honored by all his fellow citizens. He was a Mason of high degree, chairman of Illinois River division of the Internal Waterway Improvement Association and prominently identified with every public improvement and progressive enterprise. First in charity and big-hearted, the whole community mourns its leading citizen. He was buried with Masonic honors on Sunday, June 20.



## DETROIT RETAILERS.

DETROIT, MICH., June 10.—The feeling of the retailers of builders' supplies is not so harmonious as is found in some of the other large cities, and it is a fact to be deplored.

In a large city where there are a number of yards, unless the retailers are on friendly terms, one will find a market, literally speaking, "shot to pieces."

The beautiful city of Detroit has grown rapidly, and some of the retailers have profited by the booms, while others doing business on a close margin have worked hard and acquired little.

There are many fine looking buildings in Detroit, though this year has seen few large enterprises started. The residence portions are building up very rapidly, especially on the west end.

The Detroit market is a great one for brick. All the supply men carry good stocks and do a large business in all kinds of building and facing brick. There is also a large call for paving brick in this city, and there are some concerns who devote their entire business to this class of trade.

## The C. H. Little Company.

The C. H. Little Company is one of the oldest builders' supply houses in the middle west. C. H. Little, the president of the company, entered the supply business in 1856, being associated with Frederick B. Sibley. In 1866 he was taken in as a partner and the firm became known as F. B. Sibley & Co. The firm continued for twenty-two years, when Mr. Little purchased the interests of Mr. Sibley and established the business under his own name. In 1897 the C. H. Little Company was formed, and a little later consolidated with Charles Heiden, who operated a large sand business.

The other officers of the company are: Charles Heiden, vice-president; Porter A. Tucker, treasurer; Miss I. M. Little, secretary, and C. N. Ray, general manager. The offices of the company are in the Penobscot Building.

The company now has seven yards from which builders' supplies are distributed. They have recently purchased a piece of property on Jefferson Avenue and the Terminal Belt, 165'x940'. On this they have erected a concrete warehouse 80'x160'. This location is about half way between the business district and the best of the residence portion of the city.

Another piece of property they purchased is located on Woodward Avenue and the Terminal Belt. This is 720'x75'. The warehouse on this site is also of concrete construction, 30'x100'.

They are also putting up a new warehouse at Bellevue and Berlin Streets.

At the Delray yard they have installed a McManery derrick with a three-yard bucket to handle the sand from the boats. They have also installed a derrick and two and one-half-yard bucket at their sand pit at Utica, Mich., besides laying about 2,000 feet of track.

The Atwater yard of the company is the largest one they have, and from here a large amount of business is done each day. Thirty-five teams are kept busy all the time hauling supplies. The yard is on the Grand Trunk Railway, besides having excellent dockage facilities. This yard is composed of six warehouses, each kind of material being kept in a separate house.

In the cement house, which is on the railroad, a number of brands of Portland cement are carried. They are Atlas, Alpha, Peninsular, Edison, Tiger, Struthers and Wabash. The cars are unloaded by truck; each carries twenty bags of cement. Each brand is piled in one place and the piles are kept ten high, so that an accurate count is maintained on the amount of each brand on hand. In this way when unloading a car exact tab is kept on the number of bags handled.

In the lime house the bulk or lump lime is kept separate. Another house stores the hydrated lime. In this line they handle the Banner brand, manufactured by the National Mortar and Supply Company, of Gibsonburg, O., and the product of the Ohio and Western Lime Company. Besides the lime in this house they carry mortar colors manufactured by the Atlas M. and M. Company, of Lincoln, N. J., and the Cleveland mortar colors manufactured by the Garry Iron and Steel Company, of Cleveland O. Besides these they handle the products of Toch Bros.; gypsinite studding, manufactured by the United States Gypsum Company, and Sackett plaster board.

In their plaster mixing plant they manufacture the various brands of hard wall plaster marketed under the name of Little's plaster. This mill has a capacity of 150 tons per day. It is equipped with two mixers. The sand is automatically weighed and the stucco and hair added in the hopper. The sand

for the plaster first passes through a rotary drier, being fed into this by a belt conveyor. A blower draws the flame through the drier, which carries off the moisture in the sand.

The company owns and operates its own sand boats, of which it has two. These boats have a capacity of 800 yards of sand. They pump the sand either from the lake or river, depending on the quality wanted. It takes about two and one-half hours to load each boat and about seven hours to unload it at the docks. One load is delivered to the docks each day during the season. The sand is unloaded by a derrick with a two and one-half-yard bucket.

The crushed rock handled by this company is shipped in by cars and unloaded on the tracks. Their wagons for hauling sand and crushed rock are especially designed for them and have a capacity of 6,500 pounds each.

They have an excellent system for handling returned sacks. One man takes entire charge of this department, as well as the mending of them. Each day he reports to the office the number of sacks returned, and these are stored until returned to the manufacturer.

Sewer pipe, fire brick and clay goods are also handled by the company.

They have enjoyed an excellent trade this season and have secured some important contracts. Among these are the supplies for the city of Detroit. They have the contract for supplying the crushed rock, the cement and sewer pipe. They also have the contract for supplying the crushed rock for the State Good Roads' Commission.

## Samuel J. Vail Company.

A visit to the office of the Samuel J. Vail Company, 803 and 804 Hammond Building, finds the genial Samuel, whom everybody in the supply business knows. Mr. Vail is ably assisted by Ralph Spencer and Miss Kelly. The company makes a specialty of brick, which includes all kinds of paving and building brick and terra cotta. In the paving line they have secured the contract to furnish two million pavers to the street railway company, as well as a large order from the city of Detroit for pavers also. This is one of the large contracts of the season, and they are making deliveries each day. They enjoy a large trade in building brick and their showrooms have a variety to choose from. One of their advertising stunts is to have a sign on every building for which they furnish the brick, announcing this fact, and trips around the city show that they are selling some brick. At least it has been found to be a very profitable way to advertise. This company are also the agents in Michigan for the Whitehall brand of Portland cement, and they are furnishing the cement for the addition to the postoffice in Detroit.

## Brown &amp; Brown Coal Company.

The offices of the Brown & Brown Coal Company are at 294 Woodward Avenue, where the business is conducted. In the absence of Mr. Brown, Howard E. Rothermel was seen. Mr. Rothermel is a young man of very pleasing manner and has been in the supply business in Detroit for a number of years. He has been with this company since the builders' supply department has been added, which was about two years ago. Previous to that time he was with the C. H. Little Company. Speaking of business, Mr. Rothermel said that they had no complaint to make, as they had a very nice business. The outlook is good, as the residence portions of the city are building up very rapidly.

This company has four yards and carry a complete line of builders' materials. They are the agents for Universal cement in Detroit and last year handled about 20,000 barrels.

They have their own sand and gravel plant at Waterford, Mich., which supplies all the sand and gravel they sell. It has just been equipped with electrical machinery and also a washing plant. They have at one of their yards a plaster mixer plant, which at present is not in operation, though they expect to install new machinery and enlarge the plant.

One of the features of their business is the system they have for selling sand, gravel and stone. They have had special wagons built, which have a capacity of two and three yards, and when they sell a contractor can, by accurate measuring, deliver 27, 54 or 81 cubic feet of material, thus guaranteeing an exact amount. The contractor pays for the material on this basis, and they have found that this is a very satisfactory way to sell material.

## F. B. Holmes &amp; Company.

The offices of F. B. Holmes & Company are in the Hammond Building and they have yards at 228 Franklin Street and at Baltimore Street and Third Avenue. This company makes a specialty of clay goods, such as brick, both building and paving, terra

cotta, fire and roofing tile. They also handle various brands of cement, Michigan brands predominating. When asked regarding trade conditions Mr. F. B. Holmes said that their business was good, though the market conditions were demoralized. The prices of all materials were down so low that all materials were sold on very close margins. The number of concerns here which supplies the market also has a tendency to make competition keen and keep prices down.

## H. Houghton.

H. Houghton, whose offices are in the Hammond Building, has six yards scattered about the city. Mr. Houghton said that business this year had been good, though the prices for materials off and market conditions poor. The Du Bois yards is one of the largest. It is on the line of the Grand Trunk Railway and there is a switch into the yards. The warehouse is so arranged that the cars are unloaded on one side and the teams are loaded on the other side of the building. The plaster mill is located here and the Houghton brand of hard wall plaster is well known in this city. Besides the warehouse they have excellent yard facilities, where sewer pipe is carried in stock. The yard is on the river, so that the docks are well arranged to handle the sand which is brought in by boat.

## The Bartlett Company.

The Bartlett Company is a well known firm of builders' supplies and have their main office at Jackson, Mich. J. E. Bartlett, head of this company, is a man who is well and very favorably known all over the country. They have been established in Detroit about one year and have two yards here. D. J. De Vannie is the local manager, though Mr. Bartlett divides his time between this and the Jackson office. The offices of the company are in the Hammond Building. Here they have a large display of building and facing brick for their customers to view. They are large distributors of Portland cement and handle the Huron and Egyptian brands.

## The Fairview Coal and Supply Company.

The Fairview Coal and Supply Company is one of the new comers in the builders' supply and coal business. They are located at Kercheval Street and the Terminal Belt. Harry Thompson, the manager of the company, has been in the supply business for the past nine years. Two years ago he established this company. Their location is in a growing part of the city and one which is developing very rapidly. They have a switch track into the yards and alongside of the warehouse. They handle Huron Portland cement, Sibley lime, plaster from the American Cement Plaster Company, as well as sewer pipe, brick and paving materials. Mr. Thompson believes that the outlook for the remainder of the year is good, and as they are located in the residence district will enjoy a good season.

## Economical Method for Mending Bags.

The troubles that the material men have with their bags is one that every one is familiar with. The bane of the retailer as well as the manufacturer is the torn bag returned which the consumer wants credit for. If the bag is torn too badly it has to be thrown away. If it has a small tear the usual method of procedure is to have a man with needle and twine sew a patch on it. This is an undesirable job and it is hard to get people to do this kind of work on account of the dirt and dust in the sacks. Besides this, it is a slow and laborious process. If the bag is again used and subjected to hard usage, the patch may be torn off or the twine may be broken, making it necessary to patch the bag again.

The C. H. Little Company, of Detroit, Mich., have been experimenting for a number of years and have at last found a solution for their bag troubles. It is in the form of a cement and they are now marketing it so that other people may have the advantage of their invention. It is known as Little's Sac Patching Sement and is sold in any quantity. By the use of this material the man brushes the dust of the bag away from the part to be patched. The liquid is spread around the parts and the patch is pressed onto the bag. After the cement is allowed a certain time to dry it will be found that it has adhered to the bag and the bag is ready for use. It is claimed by the C. H. Little Company that in their sack department one man handles all the bags and he is enabled by this new method to mend ten bags where formerly he mended one.

## All the News, All the Time.

One of the largest retailers of builders' supplies in the state of Illinois in conversation with an active association man said: "Our trade paper is ROCK PRODUCTS, the ONLY paper that we have found which gives all the news, all the time, in our line."



# CHICAGO'S ACTIVITY.

## Past Records of Construction Will Be Eclipsed This Year—Heavy Business in All Lines.

### SECOND INSTALLMENT.

There are more than 100 yards scattered throughout Chicago in which building material is handled. More than 5,000 men are employed directly and indirectly in the distribution of material needed for Chicago's building operations, which so far bid fair to exceed those of last year.

Building permits issued last month were double the permits issued the same month in 1908. The cost of this city's building operations last year was more than \$68,000,000, of which at least \$29,000,000 to \$30,000,000 was represented in the value of material alone.

The task of distribution and delivery of such enormous quantities of cement, lime, brick, stone, plaster, etc., as will be needed in Chicago this year would not be an easy one were it not for the energy, experience and facilities the supply men possess.

All of the twenty-five railroads entering Chicago over which building supplies are shipped run their cars into all the yards of the dealers who own private switch tracks, where they are unloaded, the material taken into the yard or direct to the job by team where possible to save time and double handling. There are no busier places in the city than in these yards, hundreds of teams constantly coming and going, gangs of men busily handling material and loading wagons, and everything kept moving to insure prompt delivery to the many points in the city where the material is needed for the buildings in construction. The dealers in building material in Chicago believe that there will be greater activity in building operations than there was last year and are preparing to meet it. The facilities these men have and the methods they use in handling all this material will interest the reader.

#### The Sterns Lime and Stone Company.

The Sterns Lime and Stone Company, manufacturers of Chicago quick lime and crushed stone, and dealers in cement, stucco, land plaster, white sand and marble dust, has its general offices at 165 East Randolph Street. Its works and warehouse, quarry and lime kilns are located at Twenty-seventh and Halsted Streets. It is the oldest concern in the lime trade in the state, and in the early days of Chicago sold all the lime that was used here.

The quarry at Twenty-seventh and Halsted Streets has an interesting history. It was opened by a man named Sturtevant about 1830, and bought in 1833 by George Davis, known far and wide as "Horse Davis," a character in his day, still remembered by Fernando Jones and other old settlers living. "Horse Davis" operated the quarry more or less successfully for seventeen years.

The first stone ever used in Chicago was taken from this quarry to build the pier on the shore of Lake Michigan and the entrance to the river. This was undoubtedly the first step towards great improvements the city made in its harbor to shelter the deep-laden argosies which were the harbingers of Chicago's greatness commercially, as in those days she had no railroads to depend upon.

In 1850 the father of R. I. Stearns, the treasurer of the company, bought the quarry from "Horse Davis" and established the present firm, which was incorporated in 1890.

D. E. Healy, superintendent at quarry and lime kilns, has held that position for the past fifty years. The pit of the quarry today must be 300 feet below the level of Lake Michigan and will sink to lower depths as blasting rock in it continues. "The lime of this company is sold in any quantity demanded and with it furnishes quality," said its treasurer.

#### The Standard Material Company.

The Standard Material Company's office and yard are located at Sixty-sixth Street and Lowe Avenue on the Belt Railway Company line, with a switch running direct into the yard and a team track on the west side of the switch. A driveway cuts through the center of the yard, giving the very best facilities for receiving, handling and shipping all material economically and promptly.

The equipment and arrangements connected with the yard are excellent and up-to-date.

The indications are that a large quantity of building material will be distributed from this yard because of its most central point for the whole South Side and the energy and experience of the officers of the company, Walter L. Woods, its president and

treasurer, and M. E. Van Frank, its secretary, both business in Chicago some seventeen years. This concern has been connected with the building material business since it was opened two months ago and today are swinging a large quantity of material.

In its warehouse 600 barrels of cement and plaster will be constantly kept in store for immediate daily demands. The principal brands carried are the Chicago A A, Lehigh, Marquette Portland cements, Utica hydraulic cement, Louisville natural cement and Plymouth Gypsum Company's plasters. In the yard there is piled up metal and wood lath, sand, gravel, crushed stone, sewer pipe, wall coping, flue lining, in fact everything for the mason, plasterer, cement worker and sewer builder. Twenty horses and eight wagons owned by the Standard Material Company are required to do the hauling, the average haul being about two miles and extending to the limits of the south division of the city. Lime is handled by this concern in large quantities direct from the cars to the jobs, none being stored.

#### The Waukesha Lime and Stone Company.

The selection of a location for a new yard for handling building material could not have been more propitious and more fortunate than that which was selected by the Waukesha Lime and Stone Company at Devon Avenue and Sheridan Road. The territory east and north of it to Evanston has at present but few buildings. It is essentially a residence district and in a comparatively short time will be built up as densely as Evanston and the southern part of Rogers Park with magnificent residences, and it follows conclusively that the building material for these vast improvements will be furnished by this yard.

Located on the Chicago, Milwaukee and St. Paul Railway, with their own private switch track entering the yard at its north end and branching from this point one track running on the east side and one on the west side of the yard, with team tracks alongside of each and a driveway through the center.

The equipment of the yard when completed will embrace features in labor-saving devices which will greatly facilitate the handling of material, insuring both economy and promptness. The office building, the barn and warehouse are finished. The warehouse has a storage capacity of 2,000 barrels of cement and plaster. The leading brands handled are Universal and Marquette Portland cements, Louisville natural and Utica hydraulic cements, the United States Gypsum Company's and Grand Rapids (Mich.) plasters.

Elevating machinery, operated by electricity, will be installed next month. Bins with a capacity of storing 1,000 yards of crushed stone, are now being built and will be completed in July. They will be on the west switch track, which has a pit underneath it. In this pit the cars dump the stone and the elevating machinery takes the stone in buckets on a conveying belt and dumps it into the bins. Wagons can drive under the bins and are loaded by gravity quickly and without labor. A derrick with a skip attached and operated by electricity will be put in position some time in July to handle rubble stone at this yard, which will prove a great labor-saving device. This rubble stone is shipped from its quarries in Waukesha and Racine.

Sewer pipe and fittings, pressed brick, wall coping, flue linings and other building material is handled at this yard. It was opened in February, since which time all these improvements have been made, and J. M. Bower, the superintendent, said when completed will be one of the model yards in the country. He said at present he used eighteen horses and ten teams for the teaming and that the average haul was about two miles. The other yard of the company is located at Central Park and Bloomingdale Road on the Chicago, Milwaukee and St. Paul Railroad, and also handles a full line of building material.

#### The Circuit Supply Company.

One of the best-equipped and admirably-arranged yards for handling building material in South Chicago is that of the Circuit Supply Company, located at Eighty-third Street and Escanaba Avenue, on the Baltimore & Ohio Railroad. The company has a private switch track, accommodating eight cars, which runs through the center of the yard. The ground of the yard is one entire block in length and 265 feet in depth, having a railroad frontage of 330 feet.

A team track runs alongside the switch track, and driveways run through the center and circle the interior of the yard convenient for handling material in loading or unloading wagons. A modern warehouse, constructed of galvanized iron, close to the switch track, has a capacity of storing 2,500 barrels of cement and plaster. Driveways pass the warehouse on two sides, with wide sliding doors, from which wagons are loaded to haul material to the jobs. Universal, Wolverine, Chicago A A Portland cements, Utica hydraulic cement, Grand Rapids

(Mich.) and the United Gypsum Company's plaster are the leading brands carried. Lime is shipped in bulk from the Marblehead Lime Company, Wisconsin, and handled direct from the cars, sales reaching nearly 1,000 barrels a week.

Large well-built sheds in various parts of the yard are used for storing sewer pipe and fittings, wall coping, chimney tops, fire brick, coal, coke, common and pressed brick. Crushed and rubble stone, torpedo, bank and beach sand are stored in the open of the yard. This concern deals heavily in stone and sand, most of which is handled direct from cars.

A barn in the yard with all the modern equipments, including concrete floor and electric lights, has sixteen stalls. At present it owns and uses fourteen horses, seven double and one single wagon to do the teaming in the territory covered. A handsome two-story building on the corner of the streets on which the yard is located is used for its office, the upper floor being used for the home of the superintendent and his family.

The territory the Circuit Supply Company covers is bounded on the north by Sixty-third Street, on the east by the lake, on the south by Hegewich and on the west by Cottage Grove Avenue. The average haul is one and one-half miles, though occasionally their teams deliver material to jobs five miles from the yard.

Seventy-five per cent of all the material they sell is handled direct from cars on track to the job, as can be readily understood from the fact that this company has daily cars standing on the track of the Baltimore and Ohio Road at Seventy-third Street, Ninety-third Street and One Hundredth Street on the Illinois Central Road at Seventy-fifth, Seventy-ninth and Ninety-third Streets. Their teams are sent to these several points, the material loaded into the wagons from the cars on the track and hauled to the jobs. Seldom have they to pay any demurrage, which is owing to their activity in handling material and which has gained them a most enviable reputation for prompt delivery.

When the power houses of the Commonwealth Edison Company were built in South Chicago and Grand Crossing this company was awarded the contract for furnishing all the cement, lime, torpedo and bank sand, brick and crushed stone needed in their construction.

#### The Templeton Lime Company.

The Templeton Lime Company, manufacturers of Wisconsin lime and dealers in Portland and natural cement stucco, hair, fiber, wall plaster, lath and a complete line of building material, has its main office and yard at Homan and Grand Avenues. It is on the Chicago, Milwaukee & St. Paul Railway. A private switch 800 feet long runs down from the elevation of the main tracks to the ground level of the yard the entire length on its north side, with a team track the same length on the south side of it, used to load wagons with material from the cars direct, without passing through the yard, saving double handling. A driveway runs through the middle of the yard in close proximity to the material stored therein. The warehouse is close to the switch track, convenient to receive cement, plaster and stucco shipped to the yard in cars. The principal brands handled are Marquette and Universal Portland cements, Louisville natural cement, Harvey's stucco and Plymouth cement plaster. They are heavy dealers in lath, selling 2,000,000 a month. Lime is the main business of this concern, getting its entire supply from the Templeton Lime and Stone Company, of Templeton, Wis. All the lime is handled direct from the cars, none being stored. The sales average 300 barrels of lime a day. All the building material stored in the yard is under cover except lath. They deal extensively in gravel, bank and torpedo sand. The barn adjoins the warehouse, where twenty horses are stabled. They use eight teams and two single wagons for the hauling of material in the territory they cover, the average haul ranging from three to five miles.

#### The T. M. Tobin Bros. Company.

The oldest concern in South Chicago handling coal, cement lime and building material is the T. M. Tobin Bros. Company. It was established in 1873 and acknowledged to be the pioneer in the trade. The office and yard is located at 9326 to 9366 South Chicago Avenue on the Lake Shore & Michigan Southern Railway.

The yard is one of the largest in South Chicago, 500x150 feet, with a switch track running through it, a team track on the south side of it and a broad driveway running through and around the yard to facilitate the handling of material in all parts of it, which is done economically and promptly.

Its warehouse has a capacity of storing 4,000 barrels of cement, plaster and stucco. An immense shed near the warehouse and the switch track holds many carloads of coal, brick and building material. A

brick barn in the yard stables fifteen horses of the firm. Seven double teams owned by the concern are ordinarily required to haul the material handled in this yard, but many more are hired during the rush season.

This firm handles Atlas Portland cement exclusively and Louisville natural and Utica hydraulic cements. Its lime it receives from Wisconsin and handles about 12,000 barrels a year, all in bulk and mostly handled direct from the cars. The Climax from Grand Rapids, Mich., and the Agatite of the American Cement Plaster Company, Lawrence, Kan., are the leading brands of plaster it sells. It sells during the year 4,000,000 to 5,000,000 of the S. S. Kimball and Illinois Brick Companies' pressed and common brick, keeping always on hand 50,000 pressed brick. A complete line of all building material is stored in the yard, including sewer pipe and flue lining from the Chicago Fire Brick Company, wall coping from the Streeter Clay Manufacturing Company, crushed and rubble stone, torpedo and bank sand, in which this company deals extensively, is stored in the open in the yard. The territory in which they deliver material by teams to the jobs embraces all South Chicago, and in many instances beyond, making the average haul from one and one-half miles to five miles.

#### The Knickerbocker Ice Company.

The Knickerbocker Ice Company's main office is at 171 La Salle Street in the New York Life Building. Its twenty-five yards are located all on railroad tracks, with switch tracks running through each and so scattered through the north, west and south divisions of Chicago that the haul by team cannot be more than three miles to any job in the territory covered by its respective yard. In addition to covering the territory in the city its yards extend north to Wilmette, south to Hammond and west include Oak Park. In all these yards there are modern built warehouses for the storage of cement, plaster and stucco, large sheds for sheltering building material and barns for stabling horses. The warehouses are invariably close to the switch tracks and the other materials in the yards close to driveways to make the handling and loading for delivery as economical and prompt as possible, in fact all the methods employed in these yards have been obtained by long years of experience.

The average storage capacity of its warehouses is about 3,000 barrels of cement and plaster in each yard. The company is sole agent for the Medusa Portland cement. It manufactures hard plaster at its plant at Milwaukee Avenue and Bloomingdale Road, which has a capacity of thirty-five tons a day. It has put up and just finished a big plaster plant at Thirty-first Street and the Lake Shore tracks, and it is their intention to manufacture everything in the way of patent plasters. Its capacity will be 200 tons a day.

It produces its own sand and gravel, having gravel washers at Janesville, Wis.; South Elgin, Ill.; South Bend and Dane Park, Ind. The gravel produced and handled is one to two inches for heavy concrete work, one to one-half-inch gravel for light concrete work, one-quarter to one-half-inch gravel for tar and gravel roofing.

Lime is handled at all of its yards, most of which is delivered from the car. However, if deliveries are delayed by rainy weather or other causes, lime is stored in circular air-tight iron tanks enclosed in a wooden structure to keep the temperature sufficiently cool so that the lime will not slack. Nearly all of its yards are equipped with these tanks and placed near the switch track. The capacity of these tanks is about 250 barrels of lime. Lime seldom remains in storage in these tanks longer than a week, but can be kept safely two months in the hottest weather and during the cold weather six months.

The company has recently become an extensive dealer in wood and metal lath, taking the entire output of a metal lath factory. Wooden lath is stored in the open in the yard. Stucco from Grand Rapids (Mich.) is handled by this concern in large quantities, as well as brick, hair and all other building material. From ten to thirty horses and five to twenty wagons are required to do the teaming for each yard. Seventy-five per cent of the material in these yards is handled direct from the cars.

#### The Calumet Coal and Teaming Company.

The Calumet Coal and Teaming Company have three large yards in South Chicago dealing in coke, coal, wood and building material, and are extensive contractors for street paving, filling excavations, grading and teaming. The yards are located at Ninety-fifth Street and Exchange Avenue on the Chicago, Rock Island and Pacific Railroad, at Seventy-fifth Street and Bennett Avenue on the Baltimore and Ohio Railroad and at Ninety-fifth Street and Marquette Avenue on the Belt Railroad. All three have private switches running into the yards with

admirable arrangements and methods for handling material in them economically and promptly. These yards located in different sections of South Chicago gives the company a wider range and the best facilities to deliver material promptly by team to jobs in the large territory where it is needed and which the company covers.

The company's largest and principal yard is at Ninety-fifth Street and Marquette Avenue, with two switch tracks from the Belt Railroad, one running its entire length on the west side and one running through the center of the yard with team tracks beside each. These switch tracks accommodate twenty cars.

The warehouse conveniently near the switch track for unloading material from cars has a storage capacity of 1,000 barrels of cement and plaster, the principal brand carried being the Universal Portland cement. Lime is received from Wisconsin and mostly handled direct from cars.

Sewer pipe and fittings are from the William E. Dee Company. The company handles large quantities of crushed stone, bank and torpedo sand, brick, slack cinders and full supplies for contractors and sewer builders. Thirty-five teams are required to do the hauling for the three yards. The barn where the seventy horses are stabled is at the Seventy-fifth Street yard.

#### The Central Fuel and Material Company.

The Central Fuel and Material Company deal in coal, wood, hay, grain, feed and building material. Its office is at 9464 Cottage Grove Avenue, and its yard at Ninety-third Street and the Illinois Central Railway. A private switch track runs its entire length, 600 feet on the east side, which is used for handling building material, while the switch track



PLANT OF THE TEMPLETON LIME AND STONE COMPANY, TEMPLETON, WIS.

running on the west side of the yard is used for coal.

The warehouse has a storage capacity of 400 barrels of cement and plaster, stands close to the east side switch track and material from the cars can be stored in warehouse without truckage and wagons on the driveway can be loaded with material in the warehouse with equal facility, which then is hauled to the job. The leading brands of cement carried are Chicago A A and Universal Portland cements. The only plasters handled by the company are Hovey's and the Agatite plaster.

R. C. Hardy, treasurer of the company, spoke of its lime house, which is built on the same principle as a refrigerator, and in which he found no trouble in keeping lime for one or two months in the hottest weather. He said most of the lime which was shipped from Wisconsin was stored in this lime house and from there delivered by team to the job. Its storage capacity is 300 barrels. The company owns seven horses, which are stabled in a barn in the yard. The teaming of the yard is done by its own wagons, ten in number, the average haul being one and one-half miles.

A full line of building material is kept in store in the yard, including pressed brick, sewer pipe and fittings, wall coping, torpedo and bank sand, roofing gravel, hair, fiber, flue lining and crushed stone. This yard was established twenty-two years ago and has supplied territory in which it is located with building material during that period of years.

#### The N. A. Williams Company.

The N. A. Williams Company's general offices are in the Chamber of Commerce Building. The yards of the company are located at Avenue H and One Hundredth Street, Belmont and Herndon Avenues, Kinzie and Halsted Streets, Forty-fifth and Armour

Avenue, Twelfth and Clark Streets, Forty-fourth and Armitage Avenue and 2470 Kinzie Street. They have rail connections and facilities admirably adapted for handling building material economically and promptly. The company owns fifty horses and twenty-five teams, which are used to do the hauling for the seven yards located in the three divisions of the city. The average haul is estimated at not more than three miles. Building material, including their own products, are handled at all these yards, such as the Akrovitrified sewer pipe, fire clay sewer pipe, culvert or extra heavy pipe, fire clay stove pipe and fittings, chimney tops, flue liners, high grade fire brick, hollow building blocks and wall coping. Chicago consumes a large quantity of the enormous output of this material manufactured in this company's nine plants located in eastern cities, which exceeds 15,000 carloads annually.

#### Marnane-Farley Company.

Marnane-Farley Company's office and yard are located at North Fortieth Avenue and Kinzie Street, on the Galena division of the Chicago and Northwestern Railway, with a switch track running parallel with the yard from Kinzie to Indiana Streets its entire length, with a team track running alongside. This makes unloading of material from cars to warehouse and yard easy, and unloading of material from cars to wagons hauling it direct to the jobs convenient and economical. The driveway through the yards passing close to the warehouse, and the building material piled on either side of it, makes loading wagons hauling material from yard to job a matter involving the minimum of labor and handling.

The warehouse has a storage capacity of 1,000 barrels of cement and plaster. The principal brands handled by this concern are Etna and Burt Portland cements, Utica hydraulic cement and the Louisville

natural cement and the plaster of the United States Gypsum Company. Lime they receive from Wisconsin and handle direct from the cars, none being stored.

Sand they handle mostly direct from the cars to the job. Gravel, bank and torpedo sand they store in the open in the yard, as well as flue lining, wall coping, sewer pipe and other building material. They own seventeen horses and ten double teams, which are used to do the hauling. The average haul they estimate to be about two miles.

#### The Thos. Moulding Company.

The Thos. Moulding Company, manufacturers of the well-known brick bearing their name, has offices on the twelfth floor of the Chamber of Commerce Building. The company owns and uses three yards, which are equipped with all the modern facilities for handling material promptly, quickly and economically.

All the yards have railroad connections and are located centrally in their respective districts in the north, west and south divisions of the city. In these yards they carry a large quantity and many varieties of brick, the brick of their own manufacture constituting the leading brand. In the different varieties of brick they handle there are some 150 shades.

Of the cements they handle and carry the Wolverine Portland cement is their leading brand. In delivering this material in the city to jobs mostly teams are used in the hauling, and in the shipping of this material in cars they make use of all the railroads coming into Chicago.

#### The Crescent Material Company.

The Crescent Material Company's office and yard are located at Sixty-fifth Street and Lowe Avenue. It deals in lime and cement. The warehouse has a



storage capacity of 1,200 barrels of cement, sufficiently large to supply the demand in the territory the yard is located. The principal brands handled are the Universal and Marquette Portland cements and the Louisville natural cement. Wisconsin lime from the Templeton Lime and Stone Company, Templeton, Wis., is handled direct from the cars to the job, none ever being stored. A barn in the yard stables twelve horses. To do the hauling of material of this yard three double and three single wagons which the company owns are used. The hauls do not average more than two and one-half miles. The Crescent Material Company handles its material economically and promptly.

**The Producers' Supply Company.**

The Producers' Supply Company, with head offices in the Chamber of Commerce Building, deal very extensively in crushed stone and lime. Divers of the oldest, largest and richest operators in these lines, with immensely valuable properties and equipment, are represented by this concern. They all modestly request that little or nothing be published of their mammoth operations, hence this mere mention in completion of the sketch of the concerns supplying materials to building operations.

**THRIVING CHICAGO SUBURB.**

**Hammond, the South Gate of the City, Supports Several Enterprising Supply Concerns.**

Hammond is no exception to the rule of suffering last year, from slack business caused by the general depression in all parts of the country, the result of the financial panic in 1907. The dealers in building material in Hammond naturally felt this condition, but faced it patiently and bravely and are now beginning to see the change for the better, for which they have anxiously looked.

Up to the present time this year the dealers say that their business has been somewhat better than a year ago, and is now showing marked improvement, and they are a unit in the opinion that when the tariff bill is passed business in their line will take a jump which will more than make up for the dull times they have experienced the last year.

This opinion has a practical backing in the fact that two firms handling coal have also entered the building field this spring, believing that a prosperity greater than has been enjoyed in years by the people of this country is awaiting them next fall.

**William Ahlborn.**

For fifteen years and more William Ahlborn has been prominent in Hammond as a contractor and dealer in building material. The location of his yard at Russel Street and the Erie Railway is convenient for receiving as well as distributing all material he handles. The equipment and arrangements of this yard have all been perfected so that large quantities of building material are handled quickly and with ease, without friction and economically.

For instance, the switch track from the Erie road runs the entire length on one side of the yard, with a team track on his own ground. The warehouse stands close to the switch track, enabling the unloading of cement, lime and plaster from the cars into the warehouse within a short time and without much labor, while handling material direct from the cars to the job is effected as easily in loading wagons on the team track. A roadway runs through the yard, where building material of all kinds is stored in the open and in bins on both sides of the roadway and wagons loaded quickly hauling it to the jobs. It requires twenty-one horses and ten wagons to do the hauling, the average haul being about two miles. A well-constructed and ventilated barn in the yard stables horses.

The storage capacity of the warehouse is 1,400 barrels of cement and 400 barrels of lime and plaster. The principal brands of cement he handles are the Marquette, Wabash and Chicago A. A. All the lime he handles he receives from Wisconsin.

He handles a large line of all kinds of building material, brick, crushed stone, torpedo sand, fire brick, sewer pipe, wall coping, the products of the Wm. E. Die Company. Mr. Ahlborn stated that he handles daily about eight carloads of building material.

**K. F. Meikle.**

H. F. Meikle, who is an extensive dealer in building materials, has his office on Sibley Street and the Erie tracks, while his yard, among the best known in Hammond, is located at Douglas Street and Price Place on the Erie Railway. Its location is an exceptionally good one, having the best of facilities for receiving, shipping and handling the materials he deals in. A switch track from the Erie Railway track runs through the middle of the yard, on either side

of which are located the warehouse bins and ground space to store cement, plaster, lime, crushed stone, torpedo sand, gravel, and pile the different kinds of building material in the open of the yard. A driveway runs through the warehouse and yard for wagons to be loaded with material to haul it to the jobs in the various localities of Hammond. These hauls average about one and one-half miles. Five horses and five wagons are used to do the hauling. The barn stabling these horses is located in the yard.

The storage capacity of the warehouse is 700 barrels of cement and plaster. He handles only the Peerless Portland cement, the Acme plaster products and the plaster of the United States Gypsum Company, always keeping in store at least 175 barrels of cement and 300 barrels of plaster. In a lime house in the yard specially built for the storage of lime he carries 200 barrels of lime in bulk, which is shipped to him from Wisconsin. This spring he has commenced handling sewer pipe, wall coping, flue linings and other building material. Brick he handles in large quantities.

**Henry Ahlborn.**

Henry Ahlborn, who has been known for the past ten years in Hammond as one of its successful contractors, is opening an office and yard for handling building materials at Lincoln and Plumber Avenues in West Hammond. It is located on the Michigan Central and Indiana Harbor Belt Railways. Switch tracks are being built from both roads, one running

entire length of the yard on the east side, one running the entire length of the yard on the west side and the third running directly through the middle of the yard, with a team track on the west side of the west switch track and a driveway running through the yard.

A large warehouse in the yard 40x100 feet stands alongside the east switch track, has a storage capacity of about 8,000 barrels of cement, stucco and plaster. The principal brands handled by this company are Atlas, Wolverine, Utica hydraulic cement, Universal Portland cement and the Grand Rapids (Mich.) and United States Gypsum Company's plaster. Lime from Wisconsin and the Dolese & Shepard Company is stored in bulk in a lime house specially constructed for the storing of lime. Roofing material, the product of the West Coast Roofing Company, is stored in the feed house. Sewer pipe, wall coping, fire, pressed and common brick flue lining of the Chicago Fire Brick Company, terra cotta of the Northwestern Terra Cotta Company, fire clay, common building and white sand are stored in the yard under sheds. A barn in the yard stables six horses. It requires seventeen wagons to do the daily hauling of the material handled in this yard, the average haul being about one and one-half miles. Of the seventeen wagons hauling the material ten the company hires, the other seven are its own.

The three switch tracks, the team track and driveway with the perfect arrangements for storing its great quantity of material in its warehouses and in



VIEW OF THE YARD AND WAREHOUSE OF BECKMAN SUPPLY COMPANY, HAMMOND, IND.

along the entire length of the yard on one side and the other running along the entire length of the yard on the alley side, each switch track having a team track, making it easy and convenient to handle material direct from the cars to the wagon to be hauled to the jobs.

The warehouse will stand close to the switch track on the alley side and will have a storage capacity of 400 barrels of lime and 600 barrels of cement and plaster. The principal brands of cement he will handle are the Universal and Marquette Portland cements. The lime he receives from the Wisconsin Lime Company. He will keep a full line of brick, sewer pipe, wall coping, gravel, sand, crushed stone and other building material. When the yard is completed a barn in it will stable four horses. Two wagons will be required to do the hauling of material to the jobs in Hammond and West Hammond, the average haul not extending over two miles.

The equipment and arrangements of this new yard are up-to-date and excellent in handling all materials quickly and economically.

Mr. Ahlborn was awarded the contract for all the concrete and brick work of the new brewery now in process of construction. The plant will consist of three buildings, one three stories in height, another two stories in height and another one story high, to be used for brewing, storage, engines, boilers and ice plant, covering an area of one-half a block. Eight hundred thousand brick, 550 yards of crushed stone and torpedo sand and 600 barrels of cement will be used in the construction of these buildings.

**The Beckman Supply Company.**

The Beckman Supply Company, dealers in coal, hay, grain, flour, mill feed and building materials, has its office and yard at 315 to 325 Michigan Avenue, on the Indiana Harbor Belt Line Railway. It owns and uses three switch tracks, one running the

its sheds in the yard gives this concern uncommon facilities for handling and shipping promptly and economically building material it carries.

**Bicker Brothers.**

Bicker Bros.' coal yards on Sibley Street and the Erie Railway and Hohman Street and the Chicago Terminal Transfer Railway Company have switch tracks running into each yard. It is only this spring that they have put in a full line of cement, lime, plaster and building material, and will enter into this new field with ample facilities for handling, shipping and furnishing building material in Hammond.

**Daly Brothers.**

Daly Bros.' coal yard, located at Calumet Avenue and the Chicago Terminal Transfer Railway Company, with a switch track running through the yard, will take on added new life, as the Daly Brothers have lately put in a full line of building material and will enter the building field, in which they will soon become prominent factors.

**The Knickerbocker Ice Company.**

The Knickerbocker Ice Company, of Chicago, has a branch office and yard in Hammond with rail connections. It does a large business handling sand, gravel, cement, lime, brick, lath, stucco, hard wall plaster, hair and other building material. Its facilities for handling all this material are of the best, both for shipping and delivering it by teams to the jobs.

The Seguin Vitrified Paving and Face Brick Company has been incorporated at Seguin, Texas, with a capital stock of \$6,000. Incorporators: O. G. Pearson, H. M. Wurzbach, C. E. Tips and R. L. Wuppermann.





## TURN FEST SCULPTURE.

## Cristadoro and Duell Model Several Groups of Heroic Figures in Plaster for Turn Fest.

Cincinnati is having a Turnfest this week and it is one of the best affairs of this kind that has ever been held in this country. Cincinnati is noted for the high musical and artistic temperament of its citizens. In planning for this Turnfest, Cincinnati has exceeded anything that has been held along this line, for the reason that it has developed to a high degree the artistic phase of the event.

One of the most beautiful features of this Turnfest is several groups of heroic statues made from plaster that are to be placed on Garden Square, on which is located the main reviewing stand. They will also be at other points in the city. These figures are built on a basis of seven feet high, when standing erect. There is a discus thrower, a shot putter, two runners in one group and two wrestlers in another. The figures have been very artistically worked out by Clarence Cristadoro and Mr. Duell, young men of considerable ability as modeling sculptors. They have very cleverly adapted the old Greek views of modern games for recreation. The word Turnfest in German really stands largely for the same thing that the Olympiad stood for in the Greek mind.

Clarence Cristadoro describes the methods of making these groups as follows:

"Two casts were made from clay models for Government Square and two discus throwers, one shot putter and a group of runners were cast for other points outside the city.

"The clay model is built on what is called an armature, a large, upright ball, on which are fastened cross pieces of wood. Heavy pieces are put on the line of the shoulders and hips, to which the lead pipe for the arms and legs are fastened. Lead is used and it keeps the arms and legs in correct position as the work progresses.

"Over the framework of wood a layer of plaster paris and fiber is built within about two inches of the full size of the figure. This ledge of plaster supports the weight of the clay and keeps it from sagging out of shape, making the model only a fraction of the weight it would be if made of selected clay.



CINCINNATI TURN FEST STATUARY.

"The lead pipes are wound with plaster and fiber of about half size. The plaster strengthens the lead so that an arm in an extended position will stay where 'it's put.' The head is first built of plaster on the end of a short piece of pipe, which is the basis for the neck. This allows the head to be changed as desired.

The clay is thrown onto the plaster form by soft gobs, just thick enough to cover the surface. Before any clay is put on the form the plaster must be well shellaced or the clay would not stick, as

the plaster would draw all the moisture from it. The clay is gradually built up to the full size, the whole figure being developed without regard to finish or detail. When the general form, character and action suit the modelers, the details are worked out and then the completed work is given two coats of shellac and turned over to the casters.

"If more than one cast is to be made, they use a gelatine mold, which can be used for several times before losing its sharpness of detail. The gelatine is simply a good quality of glue, and is about the consistency of rubber, and will stand pretty rough handling. This gelatine mold is held in position by a plaster 'case,' which conforms to the general shape of the clay model. The mold is made by first covering the model with newspapers or cloth. On this is carefully laid a covering of clay about one-half inch thick, and over this clay the case is built. The case is made in two pieces, and, when taken apart, the layer of clay is removed, the case is put back and into the space between the model and the case the hot glue is poured. It takes several hours for the gelatine to cool, and for that reason, in all plaster shops the 'pouring' is done just before quitting time.

"One-half of the case is removed and the gelatine is divided at the same point where the two sides of the case meet. Once the mold is made the original clay model is 'wrecked.' The clay is taken from the armature and thrown into the general clay heap.

"The castings are all hollow, except in the arms and the lower part of the legs and the feet. They are made in two pieces. The arms of the original clay model are usually cut off at the shoulders, unless close to the body. If a leg is in such a position as to be free from the base, it, too, is removed, as it is easier to cast the main part of the figure. The arms and legs are cast separately and put on afterwards. They are held in place by pieces of iron pipe, which are cast into the parts and projected beyond the point of separation.

"There is considerable work done in assembling the figure and putting the arms on correctly. All flaws in the castings, such as small holes caused by bubbles in the plaster, or defects in the mold, must be filled in, or if bumps, they must be trimmed off. The 'shell' is only about one-half inch thick and is made durable by having fiber mixed with the plaster, so that, even though cracks occur, the pieces will not fall apart.

"A seven-foot figure is remarkably light and strong as soon as the water evaporates. The figure and base are cast in one piece and kept rigid by iron pipes in the legs down through into the base.

"The intention was to have all the statues colored to imitate bronze, and most of them were given that kind of a finish. Mr. Duell was responsible for the excellence of the imitation, as he is an experienced decorator as well as sculptor. At almost the last minute the architect sent word that the whole business was to be painted white. The effect is hardly



CINCINNATI'S TURN FEST STATUARY. "THE WRESTLERS" FROM THREE POINTS OF VIEW.



CINCINNATI'S TURN FEST STATUARY.

equal to the bronze finish, but it has to go."

Mr. Duell studied in the Cincinnati Art Academy and for some time has been doing decorating and designing of a special class of work for the Rookwood Pottery. His modelings, even while in the academy, attracted the attention of people who could appreciate strong, original work. Since then he has done some remarkably fine bronze reliefs.

C. C. Cristadoro studied in New York at the Chase School. Mr. Duell and he often work together on commissions and as soon as they finish the Turnfest work will commence on some extensive decorations for a courthouse. They have some figures to execute for a new theater in Cincinnati, which will be completed by this fall.

The large figures for the Cincinnati Turnfest were made, to scale, from sketches in plastiline. They were fifteen inches high and modeled complete, but not carried out in minute detail. The measurements for the armatures were all calculated from these models, and to build an armature correctly is not the easiest part of building up a seven-foot figure.

#### The Southern Gypsum Company.

About two years ago, the site of the present town of North Holston, Smyth County, Va., was a farm. Today it is transformed into a busy mining town of some 500 population.

About that time the Southern Gypsum Company, Inc., was organized with a capital of \$500,000. About \$400,000 has been invested in the purchase of land and mineral rights, construction of a railway, erection of residences and construction of the manufacturing plant and development of the mine. When the company was organized Dr. Frank A. Wilder was elected president; A. W. Ristine vice-president; C. H. Wallinger, general manager, and Charles Hull Ewing secretary and treasurer. These same gentlemen have continued in their original positions ever since.

Prior to the sinking of the shaft for the mining of the gypsum, the company used a Davis Calyx drill and tested the property thoroughly by the taking of cores. The gypsum was struck at a depth of 55 feet, having a strong and well-formed overhead wall of limestone and shale. This deposit of gypsum was found to be 50 feet thick of remarkable purity and regularity. After passing through another 80 feet of various strata, another deposit of gypsum is found and is known to be at least 75 feet thick. No drilling has taken place beyond this depth. The company has acquired over 1,000 acres of surface and mineral rights, and over 200 acres are known to carry the deposit. The deposit is estimated to produce 30,000 tons of gypsum per acre for every 10 feet in thickness, making it easy to calculate that the tonnage in the possession of the company runs into the millions.

The mine which is now being worked has been equipped with electric hoists, electric lighting and ventilating apparatus and every convenience for the safe and economic production of the rock. The mine is perfectly dry and is one of the most interesting developments in the state today.

The gypsum, after being hoisted from the mines, passes directly to the assorting and crushing house, where it is reduced to a certain size and from there is conveyed by a cable haulage system direct to stock bins, about 1,000 feet from the mouth of the mine.

The plant proper consists of three buildings of concrete and mill construction 60x80' each and three stories in height; two of these buildings are completed and carry the grinding mills, calcining plants, crushing rolls and such other machinery necessary for the operation of a modern and complete plant. In the third building will be installed the wood fibre machines and other appliances for the manufacture of wood fibre plaster, patent wall finish, stucco and its kindred products.

The company is producing and shipping about 100 tons per day, but when in full operation will have a daily capacity of over 400 tons. The present indications are that the demand for their product will increase rapidly. The company produces land plaster; crushed and calcined rock for Portland cement mills; plaster of Paris, stucco, wood fibre, fertilizer products, patent wall finish and other products, while other lines may be added as a demand for the same is assured.

This rock averages over 99 per cent calcium sulphate.

The power house is of reinforced concrete construction, absolutely fireproof and contains a 600-h.p. Westinghouse-Parsons steam turbine. A battery of two 200-h.p. boilers has been installed and two more of like capacity will be added at once. In addition to this are dynamos, fans, pumps, and other appliances which makes it a modern power station in every appointment. The air for the mines is driven underground nearly one-half mile from the manufacturing plant.

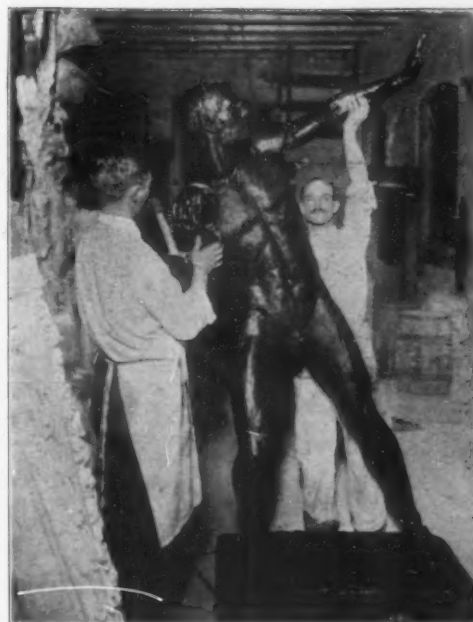
In addition to the foregoing the company constructed its own railway to connect with the Norfolk & Western railway at Saltville some four miles distant; this road is well built and on good grades and represents a considerable investment alone. Regular service will be established between North Holston and Saltville in the near future.

The company has provided first class homes for its employees and a harmony difficult to find, prevails between employer and employee. At present, fifty men find work at this point, which as soon as completed, will afford employment to double that number.

#### Complain of Rate Charged on Plaster Board.

ROCHESTER, N. Y., June 7.—Several railroads operating in this and nearby states are put on the defensive as the result of a complaint made to the Interstate Commerce Commission by the Sackett Plaster Board Company, of Garbutt, this state, concerning the rate charged for carrying plaster board from Garbutt to New York City and other points.

A hearing on the complaint was held today before Examiner Walter McCormack, of the Interstate Commerce Commission, at the Government building. Attorney Edo E. Maralis appeared for the complaining company, Attorney James S. Havens for the Buffalo, Rochester and Pittsburg and Attorney Murray Andrews, of New York, for the Erie. Other companies interested in the action are the Central, Lehigh Valley, Delaware and Hudson, Pennsylvania



CINCINNATI'S TURN FEST STATUARY.

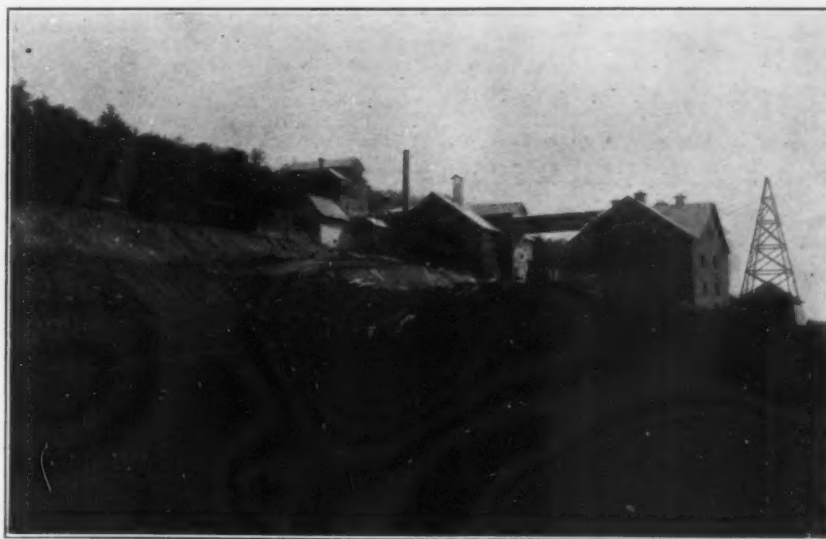
and Central Railroad of New Jersey, together with several smaller roads.

The trouble arises over the rate charged for transporting plaster board. The railroad companies formerly carried it at a commodity rate, but on June 1, 1907, plaster board was advanced to the sixth class basis. This is an increase, and the Garbutt Company complains of the advance.

The complainant assails as unjust, unreasonable and discriminatory the defendant's classification of plaster boards as shipped from Garbutt to New York City and other points as compared with the classification on plaster in bags and roofing paper, which the complainant alleges are more difficult to handle shipped from the same point.

The complainant asks that the three commodities mentioned be carried at the same commodity rates, and alleges that these commodities are carried by the same defendant between other points at the same rates. The complainant also asks reparation in the sum of \$10,716.93 with interest from the defendant on shipments made since June 1, 1907, and reparation in the sum of \$519.30 with interest from the Pennsylvania. The defendants enter a general denial.

The principal witness this morning was Frederick L. Kane, of Huntington, N. Y., treasurer and general manager of the complaining corporation. He described the manufacture of plaster board, its ingredients, and outlined the case of the complainant. The rate for carrying twenty tons of plaster board from Garbutt to New York, he said, is \$52, and \$60 to New England points. The rate for carrying plaster in bags to New York from Garbutt is \$40, he said, and from \$45 to \$52 to points in New England. He also gave the rates on roofing paper.



GENERAL VIEW OF THE SOUTHERN GYPSUM COMPANY, NORTH HOLSTON, VA.



# CEMENT

## The Situation Epitomized.

There is no better evidence of the return of prosperous conditions than the fact that the building record for the first half of 1909 compares very favorably with that of any other year in the history of building operations.

In every large city in the country building operations are well under way, but a great majority of the largest structures have not come out. For instance in New York there are quite a number of places where excavation is now in progress, but the superstructure contracts have not been let. These will all require their quota of cement.

Reports from the railroads show that they have absolutely regained their equilibrium and they are today making some substantial improvements and extensions to their roadways. Great quantities of cars have been ordered and thousands of tons of rails.

With all these evidences of a complete return of prosperous conditions the cement man has yet to realize that the way to get business is to talk concrete and concrete construction and not run down or belittle his competitor. There is entirely too much fighting among the various companies for business; there is no necessity for it. Every fair-minded man expects to pay a fair price for his material, but you can't blame him for taking advantage of conditions. It is about time the cement companies realized this. The demand is here and there is no reason why the cement companies should resort to the tactics which they have been employing for some time past. This, of course, does not apply to all of them, as in some sections of the country conditions have remained normal and prices have ruled fairly firm.

There is every indication that the remaining six months of the year will see a great building boom started. The prediction is freely made that there will be more cement used than ever. New uses are being discovered every day and old ones improved upon for the use of cement.

The building code muddle in New York will be settled amicably and concrete will be placed on a sounder foundation than ever.

The public has had an opportunity to learn more about concrete construction at the public hearings of the Board of Aldermen in New York City in the last month than they have ever been able to learn before. It has been a great advertisement for cement and concrete construction of every kind. The cement men in New York confidently expect that when the smoke clears away they will come into their own.

The insurance companies are beginning to realize that concrete construction is their only salvation. The tremendous fire losses in this country have awakened them to the realization that some other method of construction other than what has been adopted in the past is absolutely necessary in order to prevent the great loss of property entailed in serious conflagrations. They have learned by indisputable facts and figures that so-called fireproof construction is not fireproof construction at all, and that cement and concrete construction alone is the only true fireproofing construction which actually can prevent and does prevent a serious spread of fire. Once cinder concrete is placed on a proper footing and recognized as the safest method of constructing floors to make them fireproof it will be generally used all over the country.

It is the cheapest as well as the best method of fireproofing. This one feature in itself will mean the use of countless thousands of barrels of cement.

All of the great experts in the country have given their testimony at the hearing in New York tending to show that cinder concrete is all that is claimed for it.

The public hearing has also brought out the fact that buildings can be built to any height and that the high building is just as safe as the low one. The fires can be confined to any floor in which they may start.

The great growth of our American cities naturally brings forth the question as to how to transport the crowds of people in the congested downtown districts and the subway has been found to be the only solution of the problem. The complete success of the subway systems in cities like New York, Boston and Philadelphia will ultimately mean that other cities will use this method of transportation. Already Chicago has a movement on foot in this direction and other cities will soon follow suit. This will mean a tremendous use of cement.

Wherever human lives are at stake concrete construction is being considered. Hardly a theatre or any building which houses human beings is being built today without the use of concrete in some manner.

With the devastation of our forests and the actual decrease in the production of lumber with the natural increase in cost, concrete will naturally be used more than ever before. The age of concrete is no idle dream.

Cement manufacturers all over the country are taking a very hopeful view of the situation and predict that by fall normal conditions will have arrived and that if all the construction under way and contemplated becomes an actuality that the prices of cement will naturally go higher. The cooler heads in the business will see that the prices do not soar so high that they will prevent the use of this very necessary material and the growth of the industry thereby hampered.

## New Cement Mill in Venezuela.

Minister William W. Russell reports from Caracas that on April 19 the National Cement Factory was officially opened in the capital of Venezuela. The company is a native one, with a capital of 626,000 bolivars (bolivar equals 19.3 cents). The material for manufacturing the cement is obtained on the site of the factory. Portland cement has been imported into Venezuela in barrels of 170 kilos and sold at 22 and 24 bolivars per barrel. The cement from the new factory is sold in barrels of 170 kilos (375 pounds) for 16.5 bolivars per barrel, and to the government at 14.5 bolivars per barrel. From the proofs at the factory, the new cement is stated to be as good as the imported article.

## Cement for Jamaica.

Consul Frederick Van Dyne reports that with the extensive rebuilding operations now going on in Kingston and the increasing popularity of concrete construction throughout Jamaica, a promising field for American cement has been opening up, as the following indicates:

This condition is favored by the action of the legislative council in amending the local tariff law so as to place Portland cement on the free list. During the fiscal year 1906 there were only 81 barrels of cement exported from the United States to Jamaica. In 1907 the American exports aggregated 7,742 barrels. The total imports of cement for the fiscal year 1908 were 72,849 barrels.

The great bulk of this trade is with England, but with the much shorter distance and consequently lower freight charges the advantage is greatly in favor of the United States. The rapid increase in sales of this product has induced British companies to send their agents to Jamaica to endeavor to retain the trade, and in at least one case the manufacturer himself has come to Jamaica.

Excellent pioneer work has been done here in the way of introducing American cement, and the trade has been successfully initiated. Unless it is followed up, however, by sending experienced American agents to Jamaica to advertise and push sales, the advantages gained will be lost.

## Penn-Allen Company As Hosts.

President W. P. Dallett of the Engineers' Club, of Philadelphia, on June 12 headed a large delegation of the members of the junior branch of that organization on a visit of inspection to the Penn-Allen Portland Cement Company, near Bath, Pa., in order that they might see how cement is manufactured in a modern plant.

From the Reading Terminal the trip was made over the North Penn Railroad in a special car attached to the Black Diamond. A box lunch from Boothby's was served on the train. At Bethlehem the party boarded a special train on the Lehigh & New England Railroad, which ran direct to Penn Allen, under the escort of representatives of the Penn Allen Portland Cement Company.

The visitors were escorted through the plant by General Manager William E. Erdell, Sales Agent S. G. K. Stradley, Superintendent E. A. Wolf and Chemist Joseph H. Sigman. From the engine room they went to the quarries and then saw the crushing, burning and grinding, winding up in the stock houses, where they saw the cement placed automatically in bags by the Bates valve bag machine, and then shipped by the trainload out of the works. The plant, which is running in full blast, is a model one for its capacity of 2,200 to 2,500 barrels a day, in design, operation and output, and all the visitors were highly pleased with the instruction gained by the inspection.

The visitors were W. P. Dallett, president of the

club; E. E. Krauss, president of the junior branch; Paul R. Loos, secretary; Karl Nibecker, vice president; Directors George T. Gwilliam and H. P. Cochran, and John A. Carlisle, William Thumbert, Barclay White, John Gwilliam, J. Reese Bailey, Charles Elcock, H. E. Rice, Edw. J. Dauner, John Cronin, T. J. Reilly, P. J. Freeman, C. H. Acker, C. A. Bocius, R. B. Krauss, D. D. Thompson, W. D. Polk, C. S. Redding, John Horridge, F. S. Chambers and Charles H. Cox. The visit was arranged by Barclay White, chairman of the committee on trips, and Mr. Cox, who is the Philadelphia representative of the Penn Allen Company.

All branches of engineering were represented by the delegation, civil, electrical and mechanical, and the engineering schools represented included University of Pennsylvania, State College, Lehigh, Massachusetts Technology, Worcester Technology, Troy and others.

This trip of inspection was preliminary to an illustrated lecture on the manufacture of cement, which was delivered at the Engineers' Club house in Philadelphia by Richard L. Humphrey of the United States geological survey.

## Acme Portland Cement Co.

Spokane, Wash., June 18.—The contract for the engineering and construction of the Acme Portland Cement Company's plant at this city has been let to the Fuller Engineering Company, Allentown, Pa. The amount of the contract is said to be between \$650,000 and \$700,000. Work on the plant will be commenced as soon as possible. The Acme Portland Cement Company has a capital stock of \$2,500,000, most of which is held by local people.

The officers of the company are: R. K. Neill, president; John W. Graham, Dr. C. K. Merriam and Aman Moore, vice-presidents; Fred H. Mason, treasurer; E. C. Hadley, secretary and manager; J. W. Hadley, assistant secretary.

The plant will be built in units, the first unit will have a capacity of 1,500 barrels a day. It will be operated by electricity.

## Big Cement Plant Planned.

Poughkeepsie, N. Y., June 16.—The American Cement Company has closed a contract for the erection of a million dollar plant in this city, for the manufacture of Portland cement. They have purchased thirteen acres of land near the New York Central railroad. Work is to be commenced at once.

## Plant Well Under Way.

Bozeman, Mont., June 18.—Reports received here from Three Forks say that work on the construction of the cement plant at Trident is well under way. The plant will be about forty miles from Bozeman and is being built by the Three Forks Cement Company. Vreeland & Cain, of Bozeman, have charge of the work. It is expected that the plant will have a capacity of 1,800 barrels a day.

## Marquette to Retire Bonds.

The Marquette Cement Manufacturing Company, of La Salle, Ill., will, July 1, retire the entire balance of their bonded indebtedness, taking the funds from accumulated net earnings.

On May 25th the Universal Portland Cement Co. made a record production of 19,078 barrels at all of their plants. This is very good evidence of the complete return of prosperous conditions.

The Cumberland Hydraulic Cement & Manufacturing Company, Cumberland, Md., has been awarded the contract by the Expanded Metal Fireproofing Company for 8,000 barrels of Portland cement, to be used in the construction of the West Penn Hospital at Pittsburg, which will be the largest institution of its kind in western Pennsylvania. The sale was made by Joseph F. Miller, secretary of the company.

A cement plant will be built at Mefaline, Wash., on the extension of the Idaho & Washington Northern Railway. It will be known as the Inland Portland Cement Company and will have a capital of \$1,000,000. The directors are: Col. H. C. Trexler, E. M. Young, of Allentown, Pa.; Henry L. Mosser of Newberry; F. A. Blackwell, Spirit Lake, Ida., and L. P. Larsen, Spokane, Col. Trexler is the president and F. A. Blackwell vice-president.



## KOSMOS CEMENT.

**The Only Brand of Portland Cement Manufactured in Kentucky, and a Description of the Newly Rebuilt Mill.**

The only plant manufacturing Portland cement in the state of Kentucky is that of the Kosmos Portland Cement Company, located at Kosmosdale. This mill was completed in 1905 and a complete description of it appeared in *Rock Products* at the time.

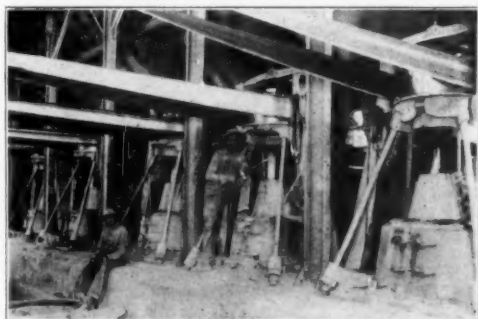
It was found that the product of this mill was a light-colored standard Portland cement, and it quickly found favor in the markets of the South. It has been supplying the territory on the Ohio and Mississippi Rivers, as it has splendid shipping facilities.

The mill was partly destroyed by fire September 11, 1908. The fire started in the overhead tramways. The power plant was destroyed in order to save the warehouse, which contained several thousand barrels of cement.

Immediately after the fire the work of reconstruction commenced, and after this was completed the mill was again started. It has now been running about sixty days.

The rebuilt plant is on a larger and better scale than before. The capacity has been increased by the additional machinery, and now has an output of 1,500 barrels per day. The machinery is designed that this capacity may be increased to 3,000 barrels when the increased demand warrants it.

The mill is advantageously located and is well equipped to make prompt shipments. The location of the quarry is one of the most ideal of any quarry property in the county. Every natural facility for the production and handling of the rock from the quarry is to be found here.



THE GRIFFIN MILLS.

The equipment of this mill is the best that can be bought and the company has everything in its favor for the economical production of a high-grade and uniform product.

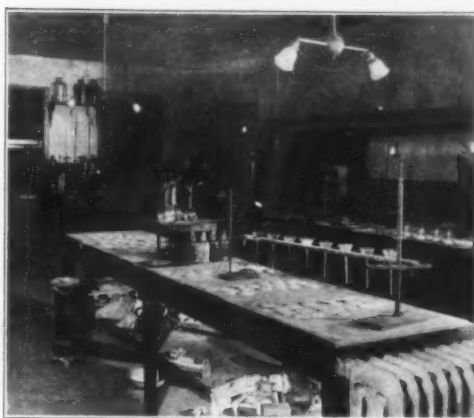
The main office of the company is at the plant. A branch office is maintained at Louisville.

The officers of the company are: Samuel Horner, Jr., president; Charles Horner, vice president; A. McCracken, secretary. C. N. Timmons is the manager of sales.

A brief description of the plant follows:

The plant is located on the Illinois Central Railroad about seventeen miles south of Louisville. The property extends from the Ohio River on the west to the tracks of the Louisville, Henderson & St. Louis Railroad on the east, in all about eight hundred acres. An additional five hundred acres are owned a short distance down the river, where the quarry is located.

The quarry is generally conceded to be the finest of its kind in the country. A cliff 400 feet high with a frontage of half a mile along the river affords the supply of pure oolitic limestone. The quarry level is about 150 feet above the base of the hill,



THE CHEMICAL LABORATORY.

where the power plant and crushers are located. The rock is handled in Koppel cars dumping into incline cars operated by a friction hoist, discharging the load automatically into two Gates crushers. Here it is reduced to two and a half inch size, thence on a belt conveyor to the barges, loading by an adjustable swinging spout. The company owns five of the finest deck barges on the Ohio River, each barge having a capacity of 600 to 700 tons of crushed rock.

These barges are towed to the plant and unloaded by an American Hoist & Derrick Company's derrick, having a ninety-foot mast and a seventy-five-foot boom, making a complete swing and carrying a yard and a half Jeffrey bucket. This outfit has a capacity of 1,000 yards of material in ten hours. Emptying into a large pocket, the stone is fed into cable cars on a Mead-Morrison tramway system and run either to the mill storage or up an incline trestle to the reserve storage, where 30,000 to 40,000 tons of crushed rock are always kept on hand in case of an emergency. This reserve allows the closing down of the quarry in bad weather. This end of the plant has proven quite economical. The layout of the quarry being such that a minimum number of men are used and on the cable road, two men will take care of the capacity of the derrick and dump into the mill storage. A steam shovel is provided when it is found necessary to call on the reserve storage.

Clay is obtained right at hand, the greater amount lying between the Illinois Central Railroad and the Louisville, Henderson & St. Louis Railroad tracks, there being a supply for generations to come and needing little or no stripping. Plowed and harvested with special clay gatherers, it is dumped through a trap into cable cars similar to the stone-handling system, and emptied automatically into the clay storage. This large building has a capacity for about five months' run. It is possible to harvest only in good weather and obtain sun-dried material. The clay is conveyed from the storage, dried in a 6'x60' Vulcan drier and elevated into a steel bin. It then flows into a steel car and is pulled over the bridge to a tank in the mixer building. The clay, being sun-dried, requires but little further drying, consequently this department supplies sufficient material in ten hours for day and night.

The stone in the mill storage amounting to four days' supply is fed into a scraper conveyor in the tunnel which empties into a special designed Peck overlapping bucket conveyor. This discharges into all or any one of three 6'x60' Vulcan driers. By a similar Peck conveyor and a belt conveyor the stone is dumped into large steel bins in the mixer building.

A scale car, operated by friction, runs between the stone and clay bins and empties its contents into an incline car which dumps into the ball mill bins. This scale car has proven very efficient, one man readily operating this department. The car has a capacity of two tons; the stone is run in first and

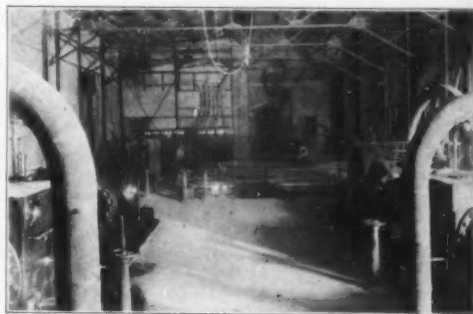
balanced on the upper beam; the counterpoise carries a pointer, and it indicates the exact amount of clay required by means of a card clamped on the scale case which has been prepared for the particular stone. Clay is run in to the amount and balanced on the lower beam of the scale. This method allows an exceedingly accurate mix to be obtained at all times.

There are three Allis-Chalmers No. 8 ball mills with all screens removed,  $\frac{3}{4}$ " holes in breast plates, and the return opening closed. The product from these mills is elevated and run through an inclined revolving screen to remove any stray balls or nuts. It then passes to the Fuller mill bins. Seven 33" Fuller mills are provided and have given perfect satisfaction. There is storage over the ball mills and Fuller mills for a twelve-hour run.

The material is conveyed to the kiln bins, which have a capacity for eighteen hours' run. The raw mix is burnt in four 7'x80' Vulcan kilns; discharging into elevators, it is raised and discharged into rotary coolers, one cooler 5'x36' for each kiln. Here it is dumped into Koppel cars and then through grates; the clinker finally reaches the clinker storage  $\frac{3}{4}$ " and under; the reject from the grates being crushed by rolls. The cars are weighed as they enter the storage and a check kept on the output of each kiln. There is ample room in the clinker storage for about eight or nine days' run, thus insuring cool, well-seasoned clinker for the finishing mills. By screw conveyors and elevators it is emptied into Griffin mill bins. Before leaving the clinker storage it is weighed in a revolving weighing machine which operates a "baby" machine giving the right amount of plaster of paris.

Twelve Griffin mills make up the finishing equipment. The stock house has a capacity of 50,000 barrels and is of reinforced concrete and divided into three large bins. Woolson Deck machines are used in the packing department.

The coal mill contains a Williams hammer mill, drier and three 33" Fuller-Lehigh mills. The drier



INTERIOR OF POWER PLANT.

is heated by an outside furnace. The gases circulating around the drier are then conveyed to the discharge end and pass through the drier to stack.

The raw, finishing and coal mills are driven by Cooper Tandem Compound Corliss engines 18x36x42, 16x24x42 and 12x24x30, respectively. The raw and finishing mills are directly connected to a line shaft running through each mill, with a counter shaft of the same size run by rope drive; half of the mills drive from each shaft. Dodge Manufacturing Company's clutches are used throughout. The coal mill engine drives the line shaft by means of a long American system rope drive.

The kilns, driers, outside cable roads and all other machinery is electrically driven. The current is furnished by two 200 K. W. De Laval steam turbines connected to General Electric A. C. generators, 3 phase, 60 cycle, 7,200 alternations, 440 volts. The power is distributed from a very handsome panel board; the generator panels carrying oil immersed switches and the feeder panels, oil immersed circuit breakers with time relays; Tirrel regulator and synchroscope are also provided. The board is most

(Continued on Page 50.)



PLANT OF THE KOSMOS PORTLAND CEMENT COMPANY, KOSMOSDALE, KY.

# CLAY

## Importance of Hollow Tile.

Hollow tile as a fireproofing material to protect the steel frames of large buildings has been quite as much a factor as the steel itself in making the modern sky-scraper a possibility. Molded of clay and burned in kilns, much like those used in the manufacture of brick, it has long been an indispensable commodity in the structural world.

By far the National Fireproofing Company, with offices in all of the principal cities, is the largest operator in this line. They have a large number of plants located in various parts of the country, manufacturing an almost endless variety of shapes for every useful purpose, and the total tonnage of the goods so produced runs up into the millions annually.

The big buildings of the city of Chicago, particularly, have always been heavy consumers of hollow tile, owing to the peculiar physical conditions of the locality.

It would be difficult to take a bird's-eye view of the loop district of Chicago and put your finger on any great building in this great sky-scraper district which has not been fireproofed with the goods

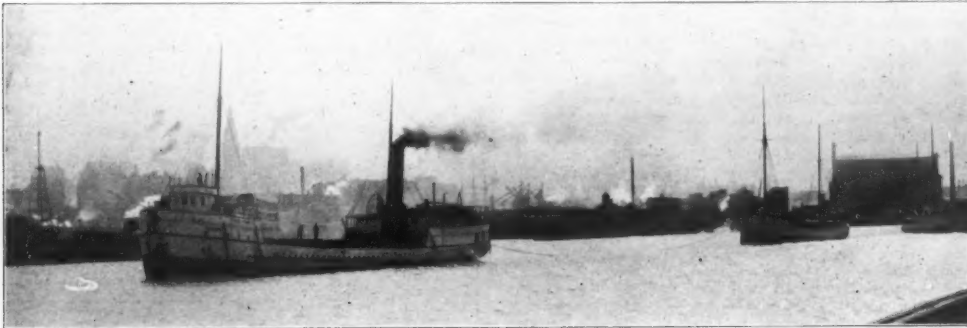
for the construction of grain bins at an elevator in Canada, which material was consigned to the Barnett, McQueen Construction Company, of Minneapolis. The size of this shipment may be better appreciated when it is realized that it required 110 freight cars to transport it from the company's factories to the loading dock at Chicago.

Hollow tile is low in price when its exclusive qualities are taken into consideration, and the difficulties and costs of production are contemplated. Labor and coal costs are constantly advancing, and the requirements of specifications more rigid with each succeeding year of normal building operations. Still hollow tile remains the cheapest of the indispensables made of clay, often really amounting to an insignificant part of the bill of materials. Like sewer pipe, it is in one of those unaccountable ruts which must sooner or later come to a substantial advance to meet the progress of the times and the growth of an ever increasing demand.

## New York Brickmakers.

HAVERSTRAW, N. Y., June 1.—There is no business which indicates the signs of prosperity or depression quicker than brick manufacturing, which right now heralds an era of good times for all the great brick manufacturing towns along the Hudson River.

Eleven brick yards so far have been opened this season which were idle this time last year, owing to hard times and the poor demand for brick. These are the plants of Dunnigan & Burns, and Morrison & Shankey, at Haverstraw; Reilly & Marks, at Stony



LAKE SHIPMENTS OF HOLLOW TILE FOR BUILDING GRAIN BINS.

manufactured and set by the National Fireproofing Company. Typical of these buildings are the great bank structures, First National, Commercial National, Corn Exchange, and such monumental buildings as the County Court House, Public Library and the Post Office.

The company is now actively engaged in fireproofing numerous structures, among which are the new City Hall, the People's Gas Building, the Blackstone Hotel, the Chicago & Northwestern Railroad Station, and they have only recently completed the work in fireproofing the new La Salle Hotel.

From their three factories at Ottawa, Ill., and the factory at Hobart, Ind., the company has for nearly twenty-five years been steadily shipping thousands upon thousands of tons of their material for fireproofing structures of all kinds throughout the West and South, and it would be hard to locate a city of any size from the Great Mississippi Valley to the Pacific Coast and from the center of Canada to the Mexican Gulf in which there are not thousands of feet of their material erected in fireproof buildings annually.

The company's shipments throughout this territory are made chiefly from the factories named, which are under the management of their Chicago office, located on the eleventh floor of the Commercial National Bank Building. The company has two storage yards in Chicago, one on the west side near the river, and one on the line of the Rock Island and other railroads on the south side. These yards are used for storage not only of fireproofing material, but for construction apparatus used in building operations, and in their south side yard is the testing laboratory in which hundreds of tests of all kinds of building materials have been made, not only for the company's information, but for the information of architects, engineers and building interests throughout the country. Some of the most valuable data extant on fireproofing constructions and their value has been evolved through the work done at this laboratory.

The illustration gives an idea of hollow tile shipments through the Great Lakes. It is a single shipment of one steamer and two barges leaving the Chicago harbor on May 1, 1909, with 3,500 tons of Johnson Record Patent Fireproof Grain Bin Tile

# SAND AND GRAVEL

## Rockford's New Plant.

The accompanying photograph shows a view of the new crushing plant of the Rockford Sand & Gravel Company, at Rockford, Ill.

The designer of this up-to-date plant was C. M. Avery, of Aurora, Ill., himself a practical engineer and a man who has made the designing of such plants a specialty.

The plant is equipped very thoroughly throughout and has a No. 5 Austin crusher, etc., used in connection with their steam shovels, conveyors, etc., and is operated in one continuous process. From the time the plant was completed, it has been a success and since that time has turned out daily 1,500 yards of crushed material.

## Will Operate Gravel Pit.

Work has been started by A. R. Moore, of Escanaba, Mich., on the construction of a model gravel screening and crushing plant at the gravel pit owned by him near the junction of the E. & L. S. road and the street railway company's line at Wells. With the equipment that will be installed, Mr. Moore will be able to furnish crushed granite and other hard stone, as well as gravel of different sizes, and sand. The plant will be operated exclusively by electricity. The gravel will be scraped from the bank with teams and dumped in a huge hopper. Passing through the hopper the material will be carried to a heavy screen by which the large stones will be separated from the small. The larger stones will be carried to the crusher where they will be reduced to proper size and then carried to an upper bin for another screening. The gravel and sand will be carried on an endless belt from the first screen to a higher level where it will again be screened and finally separated in bins from which it will be loaded.

## Gravel for Ballast.

The Richmond, Fredericksburg & Potomac Railroad Co. is now operating a gravel-washing plant, located just south of Fredericksburg, Va., for the purpose of securing a dustless ballast for the roadbed. The gravel is of the very finest quality, and amply sufficient for ballasting the entire double track between Washington and Richmond. The present ballast is being cut out to the bottom of the ties and washed gravel substituted, the object being to place several inches of washed gravel under the ties. About 15 miles of the new ballast has already been laid, and proves extremely satisfactory in every way, not only entirely obviating dust, but presenting a very attractive appearance. The new ballast will be laid over the entire line in about twelve months.

## Sand Company Reorganizes.

Deckers Creek Stone & Sand Co., Morgantown, W. Va., reorganized with H. R. Warfield, president and treasurer; E. H. Yeo, general manager. They will install new equipment in the plant and manufacture steel foundry, engine and motor sand; capacity 300 tons glass sand daily. They will also develop limestone.

## The Queen City Sand and Gravel Co.

Certificate of incorporation was filed recently of the Queen City Sand and Gravel Company, Buffalo, N. Y., with a capital stock of \$700.



PLANT OF THE ROCKFORD SAND & GRAVEL COMPANY, ROCKFORD, ILL.



# SAND-LIME BRICK

## Explosion of Hardening Cylinders.

BY FELIX KLOECK.

Again we hear of a serious accident, which happened in a sand lime brick plant, the explosion of a hardening cylinder. Although there have been a number of such accidents abroad, and as far as I know three in the United States, one in New York state, one in Indiana and one in Michigan, it is a noticeable fact that in all reported cases it is the head which blows off. The corresponding circumstances are always the same. In the following we give a translation of the article in the Tonindustrie Zeitung, of Berlin, May 20:

On April 23, 12:30 p. m., the middle one of three hardening cylinders in the plant of Paul Listner, in Grünberg, Silesia, exploded. Ten minutes before the accident happened the boiler had been inspected by the government boiler inspector and was found to be O. K. The superintendent of the plant and the engineer, who were alone during the dinner hour inside of the building, were instantly killed, being hurled against one of the presses. The bodies were terribly mangled. Had the fatal accident occurred during working hours, undoubtedly the entire crew would have been wiped out. The head of the cylinder had blown off, taking in its course another one swinging in front of it. The parts shot through the press room with terrible force, followed by the brick cars, which were thrown over 160 feet distance.

The two cylinders not under steam were torn from their foundations because of the tremendous air pressure. The roof and walls of the building collapsed completely.

The exploded retort itself recoiled over 325 feet and was found lying outside. It had taken a straight course, following its longitudinal axis, and buried itself into the hard ground with such a vehemence that it threw up a mass of dirt and stones like a bomb, that went through the walls and roofs of the adjacent houses, which were three stories high. The solid hardening cylinder building is in ruins and the factory smokestack so badly damaged that it will be necessary to tear it down and rebuild it from foot to top. The press room and machine shop were partly demolished. All the windows in the neighborhood were broken. The total damage amounts to \$17,500.

The construction of the cylinder head and bolts can be seen on Photo 2. The diameter of the hardening cylinder was 2,000 mm. (6' 6"). The pressure allowed to be carried on the retort was 125 pounds per square inch and on the steam boiler 132 pounds per square inch. The cylinder was closed at 10:15 a. m., and it is estimated that no more than 100 pounds per square inch pressure were on at the time of the explosion. It is not clear what caused the explosion, but an excessive pressure is out of the question. The angle iron on the slots holds the bolts very loose and weak during five years of constant use and daily expansion and contraction. Owing to this, cracks invisible to the eye may have developed which suddenly enlarged. It also seems possible that the two men seeing that the cylinder was leaking and steam blowing out, tried to tighten the bolts and by this manipulation broke off the slots in which the bolts were held.

As stated before, in all cases the head is the most dangerous part and always the cause of fatalities. The writer had a similar experience, like the accident quoted, in 1899, in Rhenish Prussia. The conditions were almost identically the same. The cylinder had recoiled the same distance and the head was hurled through the plant, killing one and injuring seriously a number of men. In a session of the supervising authorities, called Generalspectors in Germany, who prosecute the responsible parties in case it is found that the accident is due to criminal negligence, it was decided that owing to the cold weather, it being the day after Christmas, the bolts were frozen. It is a well known fact that steel and iron lose considerable tensile strength under this condition and the sudden expansion of the bolts as soon as the steam was turned on may have split the bolts like glass.

I have frequently found during my fifteen years' experience by examining the bolts which had been used during a longer period that some of them were partly broken. Every foreman of a sand lime brick plant knows how easy it is to twist off a 1½-inch bolt by using a pipe on the wrench, and this is very often done by the laborers and a good long pipe is used in order to get a powerful leverage. These boys mean it well. They hear the fireman complain that "last night that d— boiler was leaking to beat the band and he could not keep up steam to save his life." A new gasket should rather be put on instead of overstraining and possibly twisting the bolts. If, as I said before, a number of bolts have been broken, a "locus minoris resistentiæ" is created and the weakest point will give.

It should be strictly observed to work "over cross" by closing the hardening cylinder heads. (See diagram.) If this rule is followed the heads will be drawn up evenly and can be made tight as long as the gasket is not too badly burned out or worn off



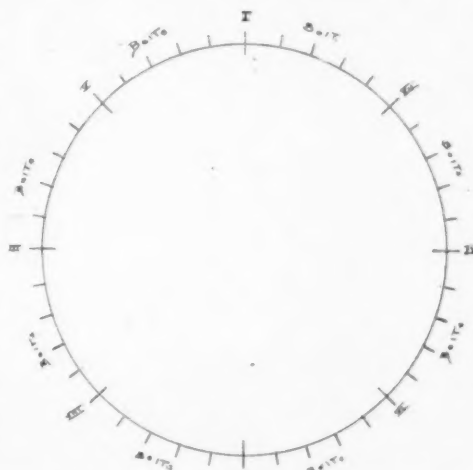
SCENE OF THE WRECKED CYLINDERS.

building, which is to be 72 by 288 feet, will have without overstraining the bolts and give cause to very serious accidents.

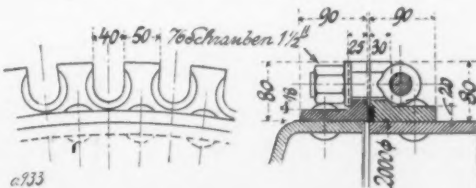
The cylinder I referred to which exploded in Rhenish Prussia carried only thirty pounds pressure. At that time there was much discussion about the so-called low-pressure and high-pressure processes. The law requires in Germany that all steam boilers must stand an hydraulic pressure test twice the amount of working pressure carried. The boiler was in commission only a few months and duly inspected, but in spite of the low pressure the consequences of the explosion were awful.

In the United States, I am informed, it is the general practice to demand a hydraulic test of 50 per cent, plus actual pressure. In 1902 I made a trip to South Dakota to start one of the first sand lime brick plants built in the States. I found the cylinders had not been submitted to a test, so I decided to do it myself, very much to the dislike of the officers of the company, who thought it to be a waste of time and labor. I stood firm and had made up my mind to test the cylinder at least to 187 pounds to the square inch, in accordance to the custom, as we expected to carry 125 pounds of steam pressure. I filled the huge retort with water and secured a force pump and was watching the gauge. By a pressure of 126 pounds the front head ripped wide open in the rim. The water spouted out with such a force for a moment that it cut a hole 2½ inches long in a 1½-inch frame wall.

Another queer thing happened to me in Holyoke, Mass. The cylinder head was shaped concave instead of convex. Why, I do not know, but the boiler-maker claimed it was much stronger this way. It was only a small experimenting cylinder, which I had placed in a separate room in such a way that I could observe the manometer. I opened the steam valve of



FIRST BOLT NO. I. THEN II, III, IV, ETC., UNTIL FINISHED. THEN GO AROUND ONCE MORE.



my stationary boiler and saw the hand of the gauge slowly creeping up to 96 pounds, when suddenly a "bum" came and the whole room filled with steam. Voluntarily I shut off the valve which I had in my hand. After the steam had cleared I entered the room and found the head had bulged out and was "convex now," nearly all of the bolts were bent or broken. A new head was made after the old fashion.

Accepting the invitation of the manufacturers of clay products in England to their German colleagues, the latter made an excursion to London on April 20, 1909. The following report appears in the Tonindustrie Zeitung, Berlin, May 20, 1909:

On Saturday we went on an inspection tour to see the works of S. and E. Collier, Ltd. This firm, one of the best known in England, is engaged in the manufacture of soft mud, dry pressed and fancy shaped clay brick, stoneware, roofing tiles, flower pots, etc., and have enlarged and constantly developed their works during the last fifty years.

Recently the proprietors decided to take up the making of sand lime brick also. The fact that underneath the clay beds a good sand is found was the main cause for the enterprise, to make use of and turn into money a seemingly worthless product. The daily output of the plant is about 100,000 clay brick and 50,000 sand-lime brick. The clay brick are sold for \$6.75 and the sand-lime brick for \$5.75. It is a remarkable fact that according to the books of the firm they make more clear money on the sand-lime brick than on the clay brick, although the former have a better market price. We also were surprised to learn the fact that the cost of fuel for burning the clay brick is a very small item in comparison with the amount in other countries, because most of the English clays contain a great percentage of oil. On account of this bituminous clay, very little coal is needed. In spite of these advantages for making brick, the factory cost for these were \$6.25 and for sand-lime brick only \$4.50, which speak very well for the new industry.

## A South American Plant.

Sheppard & Company, Ltd., La Paz, Bolivia, South America, have just completed their plant to manufacture sand lime brick. The first run of the plant, about 30,000 brick, were produced on May 10, and immediately met with a ready sale, as the quality of the brick compares very favorably with sand lime brick made in England and at Lima.

The plant was constructed under the personal direction of Thomas Clive Sheppard, C. E., who is an Englishman by birth and has spent many years in South America. He has devoted a great deal of his attention to the improvement of the building materials and construction operations in Bolivia and Peru, having occupied the position of director general of public works for the government of Bolivia and served as representative of the Peruvian corporation in Lima.

## Sand Lime Brick

The plant of the Denbigh (N. D.) Pressed Brick Company is running night and day and are now turning out 25,000 sand lime brick daily so as to keep up with the orders.

The Lake Superior Sandstone Brick Company, Calumet, Mich., are now operating their plant at Ripley to its fullest capacity. They have orders ahead for the complete output.

The silicated brick plant of the Sandstone Brick and Lime Company, located on Whidby Island, near Clinton, Wash., is to be rebuilt at once. An \$80,000 fire completely destroyed the plant. By July 15 President David Zerwekh thinks the plant will be in operation again. Seattle is the home office.

The plant of the Watertown (N. Y.) Sand Brick Company has been sold to B. W. Aldrich, cashier of the Theresa Bank, possession has been assumed and brick making will begin at once.

## Securing Location.

EVANSVILLE, IND., June 8.—Through a deal made some time ago the Anchor Roofing and Paving Company comes into possession of the property of the Republic Oil Company's warehouse and yards at the corner of Division and Sherman Streets.

The Anchor Company has had their yards and office on Water Street and they will still keep that place for storing sand and gravel, but their office will be located at the new property. They expect to change immediately.

## Awarded Roofing Contract.

The Corning Manufacturing Company, of Corning, N. Y., has been awarded the contract for putting on the roof of the new plant which the Ingersoll-Rand Company is erecting at Painted Post. The roof will be a five-ply slag roof and the building will be ready to receive the roofing July 1. The new 43,200 square feet of roofing.



### American Society for Testing Materials.

The program for the annual meeting of the American Society for Testing Materials, at the Hotel Traymore, Atlantic City, N. J., so far as it has been arranged, is as follows:

Tuesday afternoon, June 29—The meeting will be opened with the presentation of the annual report of the executive committee, after which a paper will be presented by C. E. Skinner on the "Desirability of Standardizing the Testing of Insulating and Other Materials." This will be followed by reports from the committees on standard specifications for hard-drawn copper wire, on standard specifications for paving and building brick, on fireproofing materials, and on standard specifications for coal. J. A. Holmes will present a paper on the "Fuel Investigations, U. S. Geological Survey, During the Year Ending June 30, 1909," and D. T. Randall and Perry Barker will present one on the "Effect of the Various Constituents of Coal on the Efficiency and Capacity of Boiler Furnaces."

Tuesday evening—This session will be opened by the annual address of the president, Dr. Charles B. Dudley, who has chosen for his subject "Engineering Responsibility." The remainder of the session will be given up to the following papers: "Notes on Tests of Ingots and Derivative Shapes in Progress at Watertown Arsenal," by J. E. Howard; "Closing Up Blowholes in Steel Ingots," by Prof. Henry M. Howe; "Further Investigations of Broken Steel Rails," by Dr. Henry Fay and R. W. G. Wint; "Investigation of a Defective Open-Hearth Steel Rail," by Robert Job.

Wednesday morning—The third session will be devoted wholly to steel, and reports will then be received from the committees on standard specifications for iron and steel, on uniform specifications for boilers, on standard specifications for staybolt iron and on the heat treatment of iron and steel. The following papers will also be presented: "Some Notes on the Heat Treatment of Iron and Steel," by Prof. William Campbell; "Detailed Fractures of Cold-Rolled Rails at Low Temperatures," by Dr. P. H. Dudley; "Elongation and Ductility Tests of Rail Sections Under the Manufacturers' Standard Drop-Testing Machine," by Dr. P. H. Dudley; "Dark Carbon Streaks in Segregated Metal of Split Heads of Rails," by Dr. P. H. Dudley.

Wednesday evening—The papers scheduled for this meeting are: "Measurement of Impact Stresses," by B. W. Dunn; "Testing of Galvanized and Other Zinc-Coated Iron," by Prof. W. H. Walker; "Tests of Standard and Bethlehem I-Beams and Bethlehem Girders," by Prof. Edgar Marburg; "The Permanent Mold and Its Effect on Cast Iron," by E. A. Custer.

Thursday morning—This session will be devoted to iron and steel and will be opened by a report of the committee on the corrosion of iron and steel, of which Dr. A. S. Cushman is chairman. The committee on standard specifications for cold-drawn steel will also report, and there will be the following papers: "Notes on Corrosion Tests of Iron and Steel," by R. B. Carnahan, Jr.; "Notes on Tests of Steel Columns in Progress at Watertown Arsenal," by J. E. Howard; "Physical Quality of Steel Which Has Been Subjected to Compression During Solidification," by Prof. Bradley Stoughton, and "An Interesting Driving-Axle Failure," by Max H. Wickhorst.

Thursday afternoon—This session will be devoted to cement and concrete and will be opened with the report of the committee on standard specifications for cement, of which Prof. George F. Swain is chairman, and this will be followed by the report of the committee on reinforced concrete, of which Prof. F. E. Turneure is chairman. The papers for this session are as follows: "Tests of Plain and Reinforced Columns," by Prof. M. O. Withey; "Suggestions as to the Practical Use to Be Made of Cement Testing," by Richard K. Meade; "Further Tests of Reinforced Concrete Beams Under Oft-Repeated Loading," by Prof. H. C. Berry; "Tests of Bond of Steel Rods Imbedded in Concrete by Three Methods," by Prof. H. C. Berry; "Concrete Reinforced by Nails," by Mr. L. S. Moisseiff.

Friday morning—This session will be opened with the report of the committee on preservative coatings of iron and steel, which will be followed by the report of the subcommittee on linseed oil. The papers listed for the session are as follows: "Principal Features of a 1,200,000-Pound Testing Machine," by T. Y.

Olsen; "A Machine of New Design for Hardness Tests," by T. Y. Olsen; "Notes on the Bearing Value of Rods Imbedded in Concrete," by R. A. Cummings; "Some Tests of Concrete Piers Under Varying Heights and Bearings," by Prof. Edgar Marburg; "Disintegration of Fresh Cement Floor Surfaces by the Action of Smoke Gases at Low Temperatures," by A. H. White.

Friday afternoon—The papers for this session are as follows: "The Effect of Free Carbon in Tars from the Standpoint of Road Treatment," by Prevost Hubbard; "Methods of Examination of Bituminous Materials in Use in Highway Construction," by Clifford Richardson and C. N. Forrest; "Bituminous Materials for Use in and on Road Surfaces, and Means for Determining Their Character," by Clifford Richardson; "Viscometer for Heavy Road Oil," by A. W. Dow; "Improved Instruments for the Physical Testing of Bituminous Materials," by Herbert Abraham; "A Machine for Testing the Ductility of Bituminous Paving Cements," by F. P. Smith; "Notes on Testing Turbine Oil," by Robert Job; "Further Development of the Penetrometer as Used in the Determination of the Consistency of Semisolid Bitumens," by C. N. Forrest; "Conditions Affecting the Determination of Carbenes in Bitumens of Carbon Tetrachloride," by C. N. Forrest and D. B. W. Alexander.

Saturday morning—At the closing session reports will be received from the committees on standard specifications for cast-iron and finished castings, on standard methods of testing, on standard specifications for clay and cement sewer pipes, and on standard specifications for the grading of structural timber. The papers are as follows: "Some Results of Dead-Load Bending Tests of Timber by the Use of a Recording Deflectometer," by Henry D. Tieman; "The Effect of Tension on the Shearing Strength of Rivet Steel," by E. L. Hancock; "Progress in the Structural Materials Testing Laboratory, U. S. Geological Survey," by R. L. Humphrey.

The program leaves Wednesday afternoon open for recreation, Thursday evening for an informal dinner, and Friday evening for an engineering smoker.

### Open Letter of National Association.

The National Association of Cement Users, Harrison Building, Philadelphia, has addressed a letter to the members urging their cooperation in the securing of insurance rates on various classes of concrete structures, as follows:

"It is extremely desirable that our list of insurance rates on various classes of cement structures should be as large and cover as great a variety of buildings as possible. We have frequent requests from all parts of the country for rates of insurance on various types of buildings to aid members of the association in securing the proper rate of insurance on structures in which they are particularly interested. This circular is, therefore, addressed to all the members of the association for the purpose of securing their cooperation in the extension of our present list, which is particularly deficient in rates of insurance on buildings in which manufactured stone and hollow cement building blocks are used. We would, therefore, ask you to kindly send us the names and addresses of the owners, architects and contractors of any building in your locality in which cement is largely used. Your prompt attention to this matter will be greatly appreciated.

"The members of the sectional committees are especially requested to communicate any suggestions or criticisms of the work of this association along lines in which they are particularly interested. The committees covering the various sections in which the association is divided are at work on the problems referred to them and welcome suggestions from members interested in these particular subjects."

The various sectional committees appointed for the year 1909, together with the names and addresses, are as follows:

Art and Architecture—F. A. Norris, chairman, 50 State Street, Boston, Mass.  
Building Laws and Insurance—William H. Ham, chairman, Albany Building, Boston, Mass.  
Concrete and Reinforced Concrete—Alfred E. Lindau, chairman, Bank of Commerce Building, St. Louis, Mo.  
Machinery and Appliances—L. V. Thayer, chairman, 13 North Sixth Street, Minneapolis, Minn.  
Exterior Treatment of Concrete Surfaces—Leonard C. Watson, chairman, 8 Beacon Street, Boston, Mass.  
Roadways, Sidewalks and Floors—C. W. Boynton, chairman, Commercial Bank Building, Chicago, Ill.  
Specifications for Cement Products—W. P. Anderson, chairman, Richmond and Harriet Streets, Cincinnati, Ohio.  
Specifications for Fireproofing—Rudolph P. Miller, chairman, 527 Fifth Avenue, New York City.

### Bids on Buffalo Subway Work.

BUFFALO, N. Y., May 26.—The Grade Crossing Commissioners of Buffalo have announced that the Eyre-Shoemaker Company, of Philadelphia, were the lowest bidders for the masonry part of the proposed

subway under the Bailey Avenue and William Street crossing of the Erie railroad in this city. The bids were both for stone and concrete construction, and the Eyre-Shoemaker Company submitted the bid of \$116,897.40 for concrete. The commissioners decided this to be the lowest and most advantageous bid. The various bidders and bids were as follows:

John Johnson, stone, \$134,372.45, concrete \$119,764.45; Eyre-Shoemaker Company, stone \$139,054.40, concrete \$116,879.40; Frederick Munn, stone \$168,323.90, concrete \$124,182.90; Thomas Brown Company, stone \$155,172.40, concrete \$130,059.40; Eastern Concrete Steel Company, stone \$138,526.30, concrete \$119,904.30; Stabell Company, stone \$135,735, concrete \$118,808; Henry P. Burgard, stone \$139,280, concrete \$117,181.

### Will Build Concrete Dam.

ATHOL, MASS., May 24.—The new Athol Gas & Electric Company is completing plans for a new power station in Wendell, and it is expected to secure power from that source in a few months.

To meet the new conditions, a large concrete dam will be built about 150 feet from the present power house at Wendell, that will have about three times the storage capacity of the present dam. On top of this, on the Wendell side, a concrete power house will be erected and a new pole line will be built from there to Athol and also to Erving, where it is expected light will be furnished for both house and street lighting.

### The John Peirce Assignment.

Action of a friendly nature was recorded on June 11, when Judge Gray, of the Supreme Court, New York City, appointed Henry K. S. Williams receiver for the John Peirce Company, stone contractors and builders, of No. 90 West Street, and for William Bradley & Son, Inc., cut-stone contractors of the same address, two of the leading concerns of New York City in this line. His bond in each case was fixed at \$100,000.

The application for the receiver in the case of the John Peirce Company was made by John B. McDonald, on his own behalf as a creditor for \$75,000, and on behalf of other creditors. The application for a receiver in the case of William Bradley & Son was made by Pisani Bros., of Astoria, creditors for \$6,273. O'Brien, Boardman, Platt & Littleton are the attorneys for the plaintiffs. Both companies are New York corporations.

The John Peirce Company was incorporated on January 30, 1905, with an authorized capital of \$1,250,000, and took over the business of John Peirce, which business had been established for over twenty-five years. Mr. Peirce became president of the company, and among the large contracts handled were the Hall of Records, the new Custom House, in the subway, and the anchorage for the new Manhattan bridge. William Bradley & Son was incorporated in May, 1902, with capital stock of \$100,000, and succeeded to the business of William Bradley & Son, of Brooklyn, which was established in 1867, with an office in New York for ten years. The company was controlled by the Peirce interests, the Messrs. Bradley having retired from active management some years ago.

Attorneys connected with the receivership proceedings stated that unexpected delay in making collections for work done on large contracts was the chief reason for the court action. Both companies have many large contracts under way, and it was believed to be for the best interests of creditors and the companies as well that protection should be secured through the appointment of a receiver.

### Lumber Sheds of Concrete.

The Jewett Lumber Company, Des Moines, Ia., have recently completed a concrete shed at its east side plant. In the construction of the building 1,000 barrels of cement were used and its cost was about \$10,000. Its capacity is about 60,000 feet of lumber. The shed is a three-decker, the piles of the lower bins resting on independent foundations, and not only are the walls concrete, but the posts, 8x8 inches, the girders 8x12 inches, and the floors of the office, 24x28 feet, and the hardware room, 22x40 feet, are of the same material.

The cement warehouse, 22x50 feet, has a 5-inch floor, supported by heavy concrete columns, and is supposed to be able to sustain any weight that may be placed on it. The walls were built lying flat on the ground and then elevated into place. One of the walls, 4½ inches thick, weighed ninety tons.

George A. Jewett is the president of this company; W. A. Lawrenson, secretary, and W. O. Sloan has the management of the yard.



### Concrete Blocks Modernize Residence.

The transformation of an old style architecture was completed into that of an up-to-date house in the residence of J. N. Williams, of Middletown, Del.

The house has been standing over one hundred years, as papers and receipts were found in the attic dated 1810. It was a brick structure and very substantially built. The brick are imported, as they bear the English stamp. The building was veneered with concrete blocks and the entire appearance of the house was changed by them. The cost of this was small and shows the adaptability of concrete blocks for this class of work.

To show the stability of the old-time construction it was found that the door frames were mortised, tenoned and pinned at the corners out of 4"x4" oak. The floors were hand-matched and the laths of split timber. The nails were made by hand in a blacksmith's forge. In one place the contractor, Floyd Palmer, of Washington, D. C., had to place a lintel to carry the walls above. This lintel was sixteen feet long, eighteen inches wide and sixteen inches thick. The concrete balls on top of each fence post weigh 500 pounds each. The owner is very much pleased with the results obtained by the concrete work.

### Reinforced Concrete Grain Elevators.

(Continued from Page 3.)

requirements of the grain trade. For its special accommodation the bin bottoms are kept out of the way at an altitude of 12' above the track grade. The basement is also submerged to a point 8' below the track grade, giving the total a clear height from the under side of the bin slab to the top of the basement floor 20'.

The storage is divided into twenty-two bins, ranging in capacity from 400 to 10,000 bushels each, with a total of 92,150 bushels. The bins are both rectangular and cylindrical and include the outside pockets and inside interspaces between the cylinders. The five rectangular bins across one end of the house are reserved for sacking only, the hopper bottoms of which are elevated 12' above the bottoms of the adjacent bins, thus forming a sacking room under the sacking bins the entire width of the house, the floor of which is 11' above the track grade. From the elevated sacking floor the grain is shot into cars on each side of the building by means of a scale chute which lands the sacks at an altitude of about 4' above the car floor. A suspended Richardson automatic scale traverses the sacking room from end to end and receives grain from each of the overhead bins. The arrangement of the sacking chutes and unloading sinks on the opposite end of the building permit the unloading in bulk and loading in sacks to proceed simultaneously.

The entire building up to the top of the bins is built of reinforced concrete and presents a remarkably smooth, well finished exterior. The cupola roof enclosures and machinery annex are built of structural steel and covered with galvanized iron.

All doors and windows are built to the underwriters' specifications for wire glass metal frame windows, and all interior floors are of reinforced concrete.

The machinery equipment and arrangement consists of a receiving track hopper on one side of the building from which the grain is elevated by receiving leg into a 1,500-bushel scale hopper on the ground floor. The scale hopper discharges to a loft leg



J. N. WILLIAMS' HOUSE AT MIDDLETOWN, DEL., BUILT OVER 100 YEARS AGO.

passing up through the concrete bins to the spouting system in the cupola, from which it is distributed to the storage or to the loading spouts.

The elevator legs have a capacity of 10,000 bushels each and are made of steel, as well as all spouting and machinery supports. One Eureka cleaning machine of 1,000 bushels capacity is located in the basement, the dust discharge of which reaches a Day dust collector in the machinery annex.



J. N. WILLIAMS' HOUSE AFTER EXTERIOR HAD BEEN REMODELED.

The house is driven by electric motor located in the basement, in which is also located the belt conveyors, car puller, elevator boots and basement spouting for emptying the bins. Any bin in the house may reach either of the elevator legs. In making shipment in bulk grain reaches the receiving leg from the belt conveyors and after weighing in the scale is shot into the loading spouts by means of the loft leg. One car loading spout fitted with Sandmeyer bifurcated automatic loader is provided for each track.

The compact arrangement of the machinery enables the house to be operated at the minimum of expense and labor. The scale beam is in the immediate vicinity of the unloading hopper. The distributing spouts are regulated from the scale floor, so that any bin or loading spout in the house may be reached

without going upstairs. The entire control of the basement machinery is in view and in close touch with the operator on the weighing floor, as is also the control of the car pullers for pulling cars on both tracks. The sacking business is done in a separate compartment and is entirely independent of the bulk grain handling.

Both the contractors and the owners consider that they have reached a high degree of efficiency in the arrangement and equipment of this plant, and every requirement has been met for the economical and efficient handling of the business.

From a fire hazard point of view it is interesting to know that all insurance desired has been placed at the rate of \$0.25 both for the building and contents.

### Wade's Accessible Sewer System.

James J. Wade for years has been one of the most successful plumbers and done the plumbing and sewerage in many of the great skyscrapers and buildings of modern construction in Chicago. Years ago he did a large amount of repairing and refitting of houses where plumbing and sewerage were defective.

When called upon to repair defective or clogged up sewer pipe he always had trouble. It must be understood that the sewer pipe runs from the main sewer underneath the floor of the house cellar, and to find it and its lateral branches it became necessary to tear up the wood or concrete floor, which took a great deal of time and was very expensive. After the defective pipes were repaired and put in good order the floor of the cellar had to be relaid.

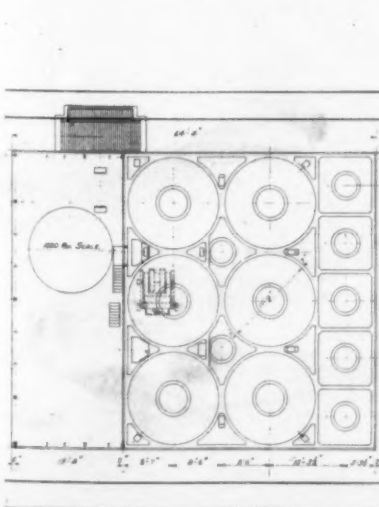
These troublesome conditions gave him the idea of devising accessible clean-out sanitary pipe fittings, with large manholes, connected with the main house drains and lateral branches. They are provided with extra heavy cast iron manhole clean-outs, extending from the sewer pipes in the ground to the level of concrete or wood floors of cellar. Each of these manholes has an extra heavy metal cover, fastened to the manhole, with electroplated lubricated steel bolts and gasket, easily removed any time by any unskilled person for the purpose of rodding, cleaning and flushing the main house drains or lateral branches without removing the floor of the cellar.

He secured patents covering the fittings and commenced manufacturing and installing what is now known far and wide throughout the country as the Wade Accessible Sewer System. Architects were quick to see its practicability, its great advantages and recommended and included it in their specifications.

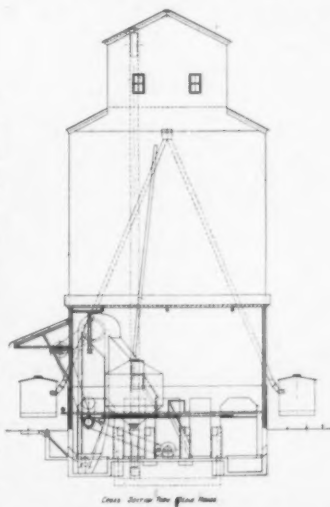
Its recognition has been marked. J. J. Wade, the founder of the Wade Iron Sanitary Manufacturing Company, said that it is the only accessible sewer system in existence in the world, and that shipments are made from Maine to California and from Canada to Mexico. The Wade system complies with municipal ordinances governing house drainage work, corrects house drains, prevents disease and preserves life and health.

### New Cement Brick Concern.

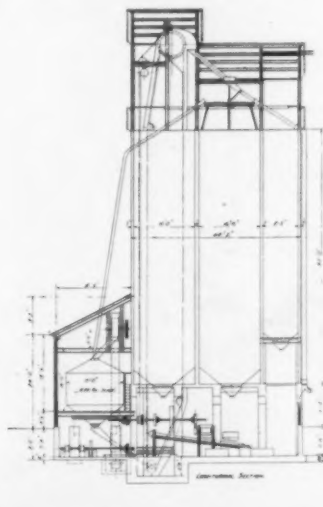
DOVER, DEL., June 1.—The State Department of Delaware recently issued certificates of incorporation to the White Silica Sand and Cement Brick Company to manufacture and prepare for market and sell sand, stone, cement and building and paving material. The incorporators are Adam Karsh, Frank J. Leary and John W. Schnellke, all of Erie, Pa. The capital is \$500,000.



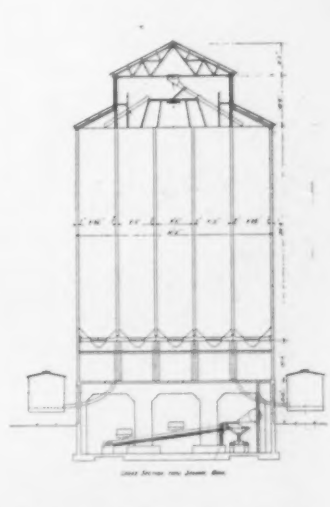
GROUND PLAN OF ELEVATOR.



PLAN OF END ELEVATION.



PLAN OF SIDE ELEVATION.



SECTION THROUGH CENTER OF GRAIN ELEVATOR.

## TYPICAL EXAMPLE

## Of Up-to-Date Reinforced Concrete Office and Warehouse Building In Philadelphia.

The old city of Philadelphia, the greatest contributor to the success of the American people, has held its own in building and advanced ideas of construction as it has in all parts of its life. The natural tendency of conservatism of its people has kept the country at large in comparative ignorance of the achievements of its enterprises and institutions. However, from time to time they are made known, that others may have the advantages and benefits of their work.

The latest design and highest achievements in engineering and architecture has been worked out in buildings here and contributed much to the development of reinforced concrete in the United States. The people have not been slow in adopting this form of construction and a large percentage of the modern structures are of this material. Among the leading firms who have taken an active and prominent place in the design of concrete structures is that of Ballinger & Perrot, engineers and architects. They have given considerable attention to this particular type of construction, with splendid achievement to their credit.

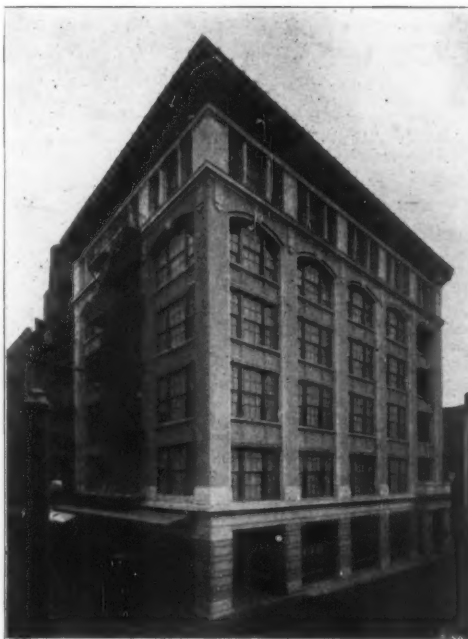
Emil Perrot, of this company, is well known to the concrete industry for the valuable contributions made at both the National Association of Cement Users convention at Cleveland last January and the First Canadian Cement Show and Concrete convention at Toronto in March. The engineering ideas and practical methods advocated by him met with considerable favor and the suggestions contained were well received.

Among the most recent work that has been accomplished in Philadelphia is an additional building for office, manufacturing and storage purposes for the wholesale drug firm of Smith, Kline & French Company, erected at the southeast corner of Fifth and Appletree Streets. It is occupied by them in addition to their present building at 429-31-33-35 Arch Street, with which it is connected.

The new structure is a six-story and basement building in modern renaissance architecture, having a frontage of 91 feet on Fifth Street and 61 feet on Appletree Street. It is of skeleton construction, similar to high office buildings, permitting the entire framework to be built first and the walls filled in afterward, thus saving time in erection. Instead of being of the usual steel construction, however, the columns, floors and roof construction are of reinforced concrete.

On the front of the building, the concrete construction from the pavement to the second story is veneered with granite. For the stories above, on both street fronts, gray brick with terra cotta trimmings is used, with copper cornices. Large plate glass windows light the first story, with bulkheads underneath for lighting the basement. In the upper stories triple window construction is used, providing a maximum amount of daylight. Ornamental iron grilles are used for the gates for the entrance on the first floor and for the railings for the balconies.

In addition to making the walls, columns, floors and roof thoroughly noncombustible by the use of reinforced concrete and brick, every precaution has been taken in designing the building to make it fire



THE SMITH, KLINE & FRENCH COMPANY'S NEW BUILDING, PHILADELPHIA, PA.

resisting in other ways. All stairs and elevators are enclosed in fireproof shafts protected with fire doors, preventing a fire among the contents of one floor from spreading to another. Fireproof windows with metal frames and sash glazed with wire glass are provided on the exposed sides of the building, preventing the entrance of fire from outside.

The main entrance of the building is on Fifth Street, from which the several floors are reached. The shipping department is located in the first story, and the floor of this department is made wagon height for convenient loading. The wagon area occupies the entire frontage on Appletree Street is entirely free from columns, the entire front of the building on this side being carried by a plate girder spanning from one side to the other. This wagon area extends back to the first row of interior columns, permitting the wagons to be loaded entirely under cover. In the second story are located the executive offices and in addition a package room. This package room is connected with the shipping department by a spiral chute for the transmission of packages. The third story is used for the manufacture of perfumery and toilet specialties, and the fourth, fifth and sixth floors for the storage of drugs and patent medicines. All floors are designed to carry a uniformly distributed load of 200 pounds per square foot, in addition to the weight of the floor construction. The wearing surface of the floors is of maple and the roof covering of slag with copper flashings.

A freight elevator and three dumb waiters provide means of transportation between the several

floors. A boiler and engine room is located in the basement of the building for providing heat, light and power. The building is also equipped with an automatic sprinkler system supplied by a gravity tank and a pressure tank on the roof.

The planning and supervision of the entire building work was in charge of Ballinger & Perrot, architects and engineers, Philadelphia. The general contractors for the work was Cramp & Company. Dexter Portland cement, furnished by Samuel H. French & Company, was used in the concrete work. The metal windows and doors were supplied by the J. S. Thorn Company. The sprinkler system was installed by the International Sprinkler Company. The elevators and package conveyors were installed by the Otis Elevator Company. For the power plant engines built by the Ames Engine Company were installed by Walker & Kepler. The boilers were furnished by the Coatesville Boiler Works and Sprague Electric Company generators were installed by Walker & Kepler.

## The Compo Stone Company.

KANSAS CITY, Mo., June 1.—The Compo Stone Company have recently opened an office and salesroom at 805 East Ninth street and will build a factory during the summer. They are manufacturers of a composition stone resembling marble. It is used for wainscoting and flooring public buildings, office buildings and bath rooms; also they make table and counter tops, mantel facing and mantel tiling. It is the only factory of its kind in this section. The company is composed of business men of Kansas City. Mr. C. C. Evans, vice president and general manager, who has been a resident of Minneapolis for the past twenty-five years, has moved his family here and has taken charge of the manufacture and business end of the company. They are now manufacturing their product in temporary quarters on Ninth Street.

## Concrete Block Residence.

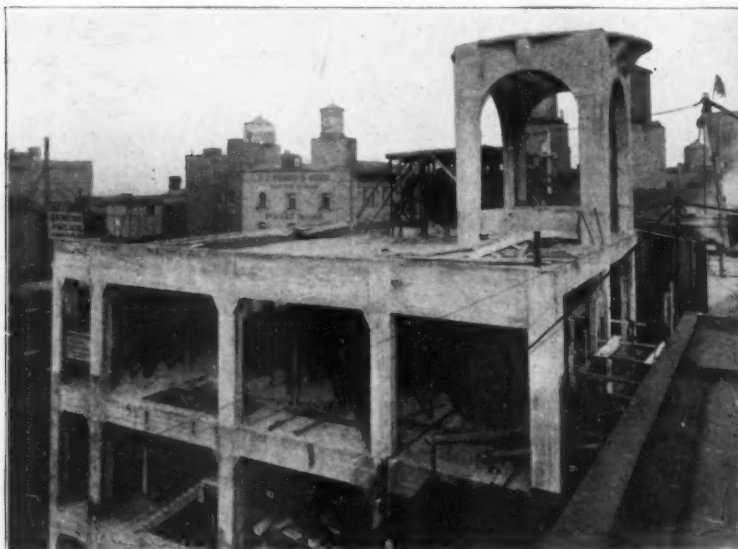
The Altoona Concrete Construction and Supply Company, of Altoona, Pa., has received the contract from Dr. William Eldon, of Roaring Spring, for the erection of a handsome residence at that place to cost in the neighborhood of \$20,000.

## Invents Concrete Block Machine.

GLENS FALLS, N. Y., June 1.—Julien Beaudot has invented a machine for the manufacture of cement blocks for building purposes. In Beaudot's invention the box locks automatically and the cores are operated by a lever. It is designed to mould three different sizes of blocks of any style desired. Beaudot has applied for a patent on his invention.

## Drain Tile Machine Company Organized.

SIoux CITY, IA., June 15.—W. J. McCracken, of the firm of McCracken Bros., who operate a concrete drain tile factory at Paullina, Ia., has invented a machine for the manufacture of concrete drain tile. The machine is equipped so that it can make two sizes of tile at the same time. A company known as the Sioux City Cement Machinery Company has been organized to build this machine. The officers of the company are: W. J. McCracken, president; Wm. Fraser, vice-president; C. A. McCracken, secretary; R. E. Fraser, treasurer.



EXTERIOR VIEW IN COURSE OF CONSTRUCTION.

THE SMITH, KLINE & FRENCH BUILDING, PHILADELPHIA, PA.



INTERIOR VIEW SHOWING FLOOR TEST.



# SOME PERTINENT FACTS.

## Relative to the Fight Now in Progress over the New York Building Code.

Anent the New York Building Code discussion, the following communication from the American Cement Engineering Company, 315 Fifth Avenue, New York, is both timely and interesting. It sheds considerable light on the subject which has caused such a big fight:

The controversy over New York City's building code, at least in so far as it is outlined in the newspapers, has some curious inconsistencies and some downright absurdities.

The code is a matter of vast importance to all classes of people as relates not only to dollars, but to life. Hollow terra cotta tile has its place and uses, but positive demonstrations of its lack of value under certain conditions, as demonstrated in the conflagrations in Baltimore and San Francisco, should not and must not be overlooked. Yet lawmakers take up the question as if positive evidence was lacking.

Argument is one thing, demonstrated facts another. We call your attention to Bulletin No. 324, United States Geological Survey, embracing reports on the San Francisco fire and earthquake. The reports were made by Richard L. Humphrey, representing the Structural Materials Division of the United States Geological Survey, and Capt. John Stephen Sewell, Corps of Engineers, U. S. A. The Bulletin is profusely illustrated by reproductions of photographs taken on the spot, illustrating the success and failure of fireproofing materials.

Both Mr. Humphrey and Captain Sewell agree that construction in San Francisco was not of a kind to withstand either earth vibrations or fire; that generally speaking it was cheap and poor, and that in most every case where an effort was made to make a building fireproof, one or more vital protective measures were overlooked or neglected, thus to a great extent nullifying the good work accomplished in other directions.

The most marked lessons to be drawn from the reports were that hollow terra cotta tile was a failure in San Francisco in floors, walls and partitions, and as a protection to metal beams, girders and columns when attacked by severe heat, and that reinforced Portland cement concrete and concrete masonry won signal triumphs. The excerpts from Mr. Humphrey's report, which follows, are in few cases continuous, but were taken in such order as they appealed to the writer. Among other things Mr. Humphrey said:

"To the user of the materials of building construction the study of the behavior and relative efficiency of the various classes of such materials under the unusual and rigorous conditions imposed by the earthquake and fire is most interesting and instructive. The test was one of such violence that only structures of first-class design and materials and honest workmanship could survive. Flimsy and loosely built structures collapsed like houses of cards under the terrific wrenching and shaking, and many of the structures which withstood the earthquake were subjected to a second test in a fire which surpassed all the great conflagrations of recent years. Some of these structures which successfully withstood the first test failed signally under the second, by reason of inadequate fireproofing. A very few withstood both tests successfully.

"While reinforced concrete structures were few in the zone of seismic disturbances, these few stood the test by earthquake and fire in a highly satisfactory manner. Rigidity and stiffness and a high fire resistance are inherent qualities of concrete, and this material proved admirably suited to resist these extraordinary tests.

"Stone and brick masonry cracked diagonally in the form of an X. Hollow tile partitions and masonry of brick or stone were similarly cracked, although this injury was small where Portland cement mortar was used. Where the walls were laid with hard brick, with plenty of headers, and in Portland cement mortar, and were properly tied to the floor and roof members, there was little, if any, damage.

"Brickwork suffered most from the earthquake and least from fire, and sandstone splintered less than granite, which suffered severely. Concrete proved superior to brick as a fireproofing material.

"Concrete is probably the best fireproofing material, because, as shown by experience, its stiffness will enable it to support not only the steel within, if the latter is softened by heat, but perhaps the structure itself.

"The ten-story Aronson Building, on the corner of Third and Mission Streets, had a steel skeleton with hollow-tile partitions and fireproofing for the columns. The floors were of concrete reinforced with expanded metal. Two of the columns on the first floor buckled by reason of the failure of the hollow-tile, the columns being shortened about 10 inches. Columns also buckled in the basement and on the fifth, eighth and tenth floors. In the basement two columns were fireproofed with concrete, and remain in first-class shape, but near them are two badly buckled columns which were fireproofed with terra cotta. This result is an excellent object lesson on the merits of the two systems of fireproofing. The sandstone was badly spalled by fire, and the walls were badly racked by the earthquake. The cast-iron stairways were very much damaged. The fire in this building was not severe."

In speaking of the eleven-story Mills Building of steel skeleton construction, with hollow-tile fireproofing and hollow-tile partitions, Mr. Humphrey says:

"The walls were racked by the earthquake. The hollow-tile failed and left the steel skeleton exposed. Four of the basement columns buckled, and the lower webs of the floor tiles failed over large areas. \* \* \* Owing to the failure of the floor tile many safes fell through the several floors."

In speaking of the Union Trust Company's building, Mr. Humphrey says: "The hollow-tile partitions failed extensively, and the lower web of the floor tile spalled over large areas. \* \* \* The steel trusses on the tenth floor were very much distorted by heat, owing to the failure of the hollow-tile fireproofing."

Captain Sewell, in the course of a voluminous report covering generally the same ground as did Mr. Humphrey, says:

"There are two opposing parties in the matter of fireproofing in San Francisco—those who have favored the hollow-tile system, and those who believe in concrete as the best fireproofing material. The Bekins Van & Storage Company's warehouse, the only building of considerable size in the city constructed of reinforced concrete, has already been mentioned as resisting the action of the earthquake and fire. In this building the concrete acted as a perfect fireproofing protection for the steel.

"Good Portland cement concrete has won a triumph for itself in fireproofing in San Francisco, for wherever well made and properly laid upon the steel girders or columns, it protected the metal. \* \* \* Examination showed also that it protected well against rust. The heat to which it was subjected was very great, in places common mortar being fused and iron work in walls melted.

"The fire in this building (the Mutual Life), while not severe, was sufficient to cause the failure of the tile fireproofing of the roof trusses, which collapsed from exposure to the heat."

The above are a few examples, solely for your information. The Bulletin should be read by everyone interested in fireproofing materials.

## Receive Contract for Concrete Work.

WORCESTER, MASS., June 1.—Ryan & Keon have been awarded the contract for all concrete construction work to be done on the New York, New Haven & Hartford road in eliminating the grade crossings between South Worcester junction and the new union passenger station. The contract is the largest yet awarded for grade crossing work. It is the largest to be awarded by the New Haven road.

In complying to the terms of the contract, Ryan & Keon will eliminate the northern halves of the dangerous grade crossings at Green, Washington and

thing except the building of a bridge over Washington street, the firm will erect and construct only the northern halves of arches, walls and supports. It will leave the work in such a condition that it may be carried on at the south side by the firm which does the Boston & Albany work.

## Substructure of Barn to be Concrete.

The contract for the substructure of the road department barn has been awarded to the Clinton Concrete Company, Clinton, Miss.

The construction is to be monolithic reinforced concrete. The building is to be 33x33 feet and will have eight stalls and a harness room. The building will be supported on four piers 12x12 inches, reinforced with heavy steel wire, electrically welded, made by the Clinton Wire Cloth Company. Two beams, 10x14 inches, reinforced with three bars of ¾-inch twisted steel running lengthwise of the building and five beams 8x10 inches, similarly reinforced, intersecting the main beams at right angles, will carry the entire first floor. All the beams are to be reinforced with stirrups to overcome the shearing stress and all steel used is guaranteed to have a tensile strength of 60,000 pounds.

The suspended floor will be double reinforced, a specially constructed heavy steel wire being used for strength and a lighter wire placed nearer the floor surface as an extra safeguard against surface cracking.

This construction throughout will be waterproof



ST. PAUL'S PARISH HOUSE, SYRACUSE, N. Y., OF CONCRETE BLOCKS.

Plymouth streets, will construct the northern halves of Madison and Hermon streets, the new streets to be run beneath the railroad, and will further construct retaining walls and do all other work made necessary by crossing elimination.

At Green street, the crossing first to the west of the new station, Ryan & Keon will construct the northern half of a concrete arch, reinforced with steel, which will be approximately 140 feet from face to face, which will be 70 feet wide and will have a clearance of 15 feet.

At Washington street the firm will construct the concrete supports and abutments for a steel girder bridge. Ryan & Keon will close Plymouth street and at the same time construct the northern half of the subway, which is to be 130 feet long, 14 feet wide and 10 feet in the clear.

The firm will extend Madison street beneath the railroad through an arch bridge which will be 110 feet long and 50 feet wide, and will have a 15-foot rise. The firm will also extend Hermon street beneath the tracks through an arch bridge of similar dimensions.

At these streets the firm will do the subgrading, but the city will finish the work. The streets will be ten feet wider than their present width, to allow for future improvement by the city.

In all its work, which embraces practically every

and rat proof. Gutters will be made in the concrete flooring in the rear of the stalls for drainage purposes and the floor itself will be slightly crowned so that there will be drainage into these gutters.

The plans for the superstructure, which is to be of wood, will be in readiness soon for contractors to inspect preparatory to submitting bids.

The plans for the entire building were prepared by Charles A. Needham, superintendent of streets.

## Splendid Job at low Cost.

SYRACUSE, N. Y., June 1.—The Parish House of St. Paul's Church has just been completed, consisting of an administration building, 40'x46', connected to the Sunday school rooms, 36'x80'. All was built of concrete blocks manufactured by the Paragon Plaster Company, upon lines drawn by Alfred T. Taylor, architect, also of Syracuse. Our half-tone illustration gives a good idea of the exterior appearance, which stamps it amongst the best class of concrete block work. Including the heating and ventilating plant installed and all complete, this job was turned over to the owners at the surprisingly low figure of 12½ cents per cubic foot. Intelligence of design and workmanship throughout could alone secure such economy, for the trim and interior finish are all of the best materials and workmanship.

### Forms for Concrete Highway Bridges.

The following paper was read at the recent North-western Cement Products Association Convention at Minneapolis. F. A. B. Patterson, of Fairmount, Minn., has presented in an able manner his views, based mainly on personal experience, on the subject of the construction of concrete bridges. The paper follows:

The building of reinforced concrete bridges is of recent date. The writer is very optimistic in regard to the future uses of reinforced concrete, and believes that it will be but a short time when all buildings and bridges will be constructed of that material. If it had not been for a few of the up-to-date, enterprising engineers and architects, the general public would know little or nothing about this wonderful material, and the many uses it can be put to. It would be well for all the old-fashioned architects and engineers to brush away the cobwebs from their eyes and investigate. There will come a time when concrete will be used in every building to be erected. If we had known fifty years ago what we know today about concrete, many billions of dollars would have been saved the nation on account of loss of property by fire and flood.

Stone bridges were first constructed by the Romans. Ruins of the structures are found in different parts of ancient Roman Empire. The first stone bridge built in London, England, was begun in 1176, and, it is said, occupied thirty-three years to build. The finest of French bridges was completed in 1774. The oldest wooden bridge (which was standing in 1900) in the United States was built in 1800 at Waterford, New York.

Owing to the cheapness of timber in America, iron was little used prior to 1850. The first iron railway bridge erected in England was built in 1823. The first iron bridge erected in America was in 1840 over the Erie Canal. Steel as a material for bridge construction began to be used about 1870—the first extensive application being in the St. Louis arches in 1873.

The use of reinforced concrete in the construction of bridges and culverts is superior over any other material that has been employed for such purposes. If properly constructed, it is not affected by storms, winds, or floods, and not subject to decay, rust or disintegration. It requires no paints or protection, no new floors to repair, and is constantly getting stronger and better with age.

The art in concrete bridge designing is its simplicity. There is at this time no form of bridge construction more simple and effective than the straight beam design. It has the advantage of an unobstructed waterway and is somewhat cheaper than the arch design on account of the cost of form.

Now, let us turn the searching ray upon the cause of success or failure. And let me say right here, that one who dislikes his work and thinks only of the cash there is in it, will soon meet his fate.

To those contemplating building bridges of concrete, employ some competent engineer to draw your plans. Do not think of doing it yourself. If you undertake that class of work failure will surely overtake you some time. I have heard many contractors complain that most engineers were too exacting in their specifications. In most cases they have themselves to thank. If the contractor is honest in his work and is willing to do the right thing, he will soon get the confidence of the engineer and the two will work together in harmony.

The cost of building concrete bridges, compared with steel, will vary somewhat according to location; but I believe reinforced concrete bridges for county purposes can compete in price with the combination iron bridges that have been built in the past. Then, again, the upkeep for the concrete bridges is nothing compared to the painting and repairing of the iron bridges. It is a well established fact that concrete combined with steel renders it more suitable for bridge building than any other material.

One of the difficulties to be met with in the construction of concrete bridges is the procuring of suitable labor, and the average carpenter, who has no experience in building forms, is of very little help to you. He does not realize the enormous weight that the timber has to bear; and, therefore, as a rule, does not build the centering strong enough. This class of men may be very costly to you. By employing a man used to building forms, much lumber will be saved. Usually too many nails are used in the work, causing a loss of time in building and ruining a large amount of material. Number seven nails will generally be found large enough. Bracing can be largely done away with by using bolts, and the average man that does the bracing does not do it as it should be done, causing delay and loss. When bolts are used and well greased, they can be readily

Before bidding on your job, examine the soil, bore down, and find what foundation you have to contend with. If you find any quicksand you must expect trouble, and your bid must be in accordance with the foundation you find. Insist on having the location and height of bridge to be built staked so that there will be no question afterwards. The writer had the following experience: The supervisors did not employ an engineer to stake location or give height of bridge, but did the work themselves. We worked one and one-half days with a crew, putting posts in the stream, when the supervisors arrived and said the bridge was too low, and demanded that it be raised two feet.

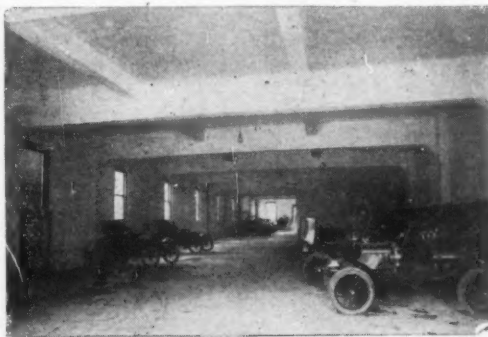
Your bid will be governed largely by the distance your gravel and sand will have to be hauled. If your work is over a river, generally a good quality of sand and gravel can be found in pockets, but is frequently mixed more or less with a large percentage of clay and shale. Be very careful of this material. It may cause you serious trouble. One engineer declares that a 1:2:4 mix is extravagant, when a 1:3:6 mix will do just as well. This is rather misleading. The writer will admit that if the proper sand and aggregates can be procured, the 1:3:6 mix will do for the footings, abutments and wings, but where one has to procure the material in the country, the 1:2:4 mix is safer to use, on account of the material generally found. I think it is generally conceded that the strength of concrete depends upon the aggregates used.

Much has been said and written regarding the proper amount of water to be used in the concrete, where it has to be poured, as is generally the case in bridge building. Made as thick as cream is preferable under general conditions; but the mass should be thoroughly churned with paddles to dispose of the air. There are times and places when one should know when not to use very sloppy concrete. For instance, when filling bridge beams with concrete, where usually a network of reinforcement is used, judgment must be used so that the rein-

forcement will not hold back the coarse material, and allow the fine to pass to the bottom of the beam, thereby causing an arch under which there is no support—making your concrete uneven in aggregates and consequently weakening it in strength. The foreman should be constantly on the watch for errors of this kind. The cost data for form work in bridge building is misleading, there being so many items entering into the work that space will prevent me from discussing it, only in a general way. The writer believes that there is a greater opportunity for investigation in the construction of centering and form building than in any other branch of concrete work. It is generally estimated that it costs from forty to fifty per cent of the total cost of concrete in any building for form work. The system known as the "two-board form method" is a great improvement over the old style, and when the forms can be successfully made of steel, a still greater saving can be made. By employing a carpenter that is accustomed to building forms for concrete, much lumber will be saved, enabling it to be used two or three times. When your forms are all erected, be careful that your lines are in place and see that your work is measured a second time so that everything is true and to line. In placing your steel, keep strictly to your plans; see that every piece is placed as directed. Too much care cannot be exercised in that branch of the work. Do not neglect wiring, just because it is a little tedious. Have the wire cut about eight inches long before you begin your placing of steel. Number 18 wire is generally used by the writer for wiring rods together. If it is necessary to use stronger wire, just double the number 18. See that all the steel is placed before pouring concrete. See that all sawdust and dirt is removed, before placing steel, and that your lumber is thoroughly wet before concrete is placed.

The mixing should be done in a batch mixer. There has been so much written about mixing that I think it is unnecessary to go into that subject. There is one thing that should not be overlooked. That is the accurate measuring of cement, sand and larger aggregates. Let there be no guess work about this.

Now, let me say a few words about a few of the tools needed. You may be some miles away from any town having the necessary appliances you require. Therefore, it will save you much trouble and expense to be somewhat prepared.



VIEW IN MOULTON-JORDAN GARAGE, MINNEAPOLIS, MINN.

An anvil, a small forge, a few cold chisels, crowbars, sledge hammers, post mauls, a good strong vise, tinners' snips, pliers, wire cutters, several claw pullers, several pieces of steel bars with both ends turned, to be used in taking the forms from the concrete; a few locomotive jacks, in case of forms giving way. They can also be used in the trenches for foundation work. Also, grindstone, pipe cutters, stock and dies, taps and dies for bolts.

Nearly all of these you will find are indispensable. Your steel should be ordered the proper lengths from the factory, but the bending will have to be done at the job. Nearly all of it should be bent cold; unless you have an experienced blacksmith there is danger of over-burning your steel, thereby weakening your material.

Most of your outside forms can be removed the next day after the concrete has been placed by wetting the concrete thoroughly. Then apply a 1:2 mix of fine sand; then brush in, rubbing down with a carborundum stone. It gives the surface a very smooth and pleasing effect.

Last but not least, see that all plank walks and scaffolding are rigid and strong, preventing any cause for accidents. This one item alone may save you an expensive lawsuit. Take no chances.

### Start Work on Spur.

DENVER, COLO., June 9.—Work has begun on the spur from the Colorado & Southern to Twin Lakes, the new reservoir of the Eastern Colorado Power Company, which will be built in the valley about six miles northwest of Boulder. This reservoir will be one of the largest in Boulder county, and will be supplementary to the mountain reservoirs which store water near Nederlands for power purposes for this company.

A contract has been let to California parties to make and lay the three-foot concrete pipe from the Nederland dam to the Kosler forebay, twelve miles distant, most of the excavating for this line having been completed. Work is to be pushed in order to have the plant ready to deliver energy by winter, as an auxiliary to the Shoshone plant.

Five hundred cars of cement have been purchased by the company and will be taken by the Denver, Boulder & Western Railroad to the Nederland dam for the purpose of completing that larger reservoir, which will have cost \$600,000 when finished. The construction of the dam is well under way, and about 500 cubic yards of concrete are being placed daily. This quantity is to be increased to 1,000 cubic yards

in a short time. The dam will be 186 feet high.

Three transformers, said to be the largest ever manufactured, are in Boulder and are about to be taken to the power house on Middle Boulder Creek. Each transformer weighs ten tons. Foundations for the power house are completed and the brick work on the main structure will commence at an early date. Five million pounds of steel will be used in the pressure pipe line, which will withstand a pressure of over 900 pounds to the square inch at the wheelpit. A single length of this pipe will weigh about ten tons.

### A Concrete Garage.

We are showing on this page the illustration of a garage of concrete built for Moulton & Jordan at Minneapolis, Minn. The building is 43'x140', and the concrete was composed of an aggregate of Portland cement and crushed limestone. The concrete was reinforced with corrugated steel bars. The concrete beams are of 16' centers.

The contractor was John Wurder, the architects were Kees & Colburn, and the concrete work was designed by C. A. P. Turner. All of these are of Minneapolis.

### Devises Concrete Mixer.

C. J. A. Lindstrom, of Tacoma, Wash., has invented a concrete mixer which needs no machinery and yet which mixes uniformly. Mr. Lindstrom has procured abundant backing and expects to make a royalty arrangement with the contractors on a yardage basis. The machine has been used for some time in making the culvert under Pacific Avenue, and has stood the test to the satisfaction of the city officials and the officers of the Milwaukee Railroad.

### The Concrete Manufacturing and Construction Company.

The plant of the Concrete Manufacturing & Construction Company, Mishawaka, Ind., is equipped with all up-to-date machinery and appliances, both as to handling of gravel and the manufacture of stone.

The plant is located on the E. & W. tracks, near John Street, where the company has a good supply of sand and gravel for concrete purposes.

The sand and gravel are conveyed from the pit to the storage bins by means of a conveyor, the buckets dumping automatically into a revolving screen, which latter separates the sand from the gravel and into separate compartments. From the storage bins the sand and gravel is elevated to the using bins on the second floor above the concrete mixer. The operator of the mixer pulls a slide which permits the proper proportion of gravel and sand to enter a graduating bin, which latter holds sufficient for one mix. This mixture then passes into the mixer; then the proper proportion of cement is added, thoroughly mixed dry, then sufficient water is added to make what is known as a "wet" mixture, and again thoroughly mixed. The wet or mixed concrete then passes to the machines. The blocks are taken from the machine, placed on steel trucks and conveyed to the steam kilns. After the initial set of cement has taken place exhaust steam is turned into the kilns, the blocks remaining in steam until the cement is thoroughly crystallized. The steam process of curing concrete is acknowledged to be the best process, as it insures an even distribution of moisture, which means perfect crystallization of the cement.

### Ornamental Concrete Work.

ALLENTOWN, PA., June 4.—The Keystone Cement Block Company, of this city, has recently furnished some very beautiful ornamental concrete work for the front of William J. Leh's residence, at the northeast corner of Eighth and Turner Streets, and the Model Troy Laundry Company building, on the east side of North Tenth Street, between Hamilton and Linden Streets. The company is also making the blocks for the ornamental fence for the Episcopal Church at Mahanoy City.

Lilly White Cement Company, Phillipsburg, N. J., has been incorporated with a capital stock of \$300,000. The company is to manufacture Portland cement, lime, limestone, clays, plaster, etc. The incorporators are: W. Elwood Snyder, Reuben F. Messinger and Thomas D. Danner.

Articles of incorporation of the Portland Cement Securities Company of Portland, Ore., have been filed in the office of the county clerk by Alex. Nibley, Aman Moore and J. N. Teal. The capital stock is \$250,000.



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one third more sand than other brands — It is the highest possible grade and guaranteed in every particular and to meet all requirements of the U. S. Army and American Society for Testing Materials.

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percentage of breakage  
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In fact they are glad to work for pleasure  
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lay twice as much wall per day.

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re-building since our fire, we  
are again turning out **Kosmos  
Portland Cement**—as good  
as ever, and a little more of it.

ASK FOR QUOTATIONS

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Used by the Railroads in Kentucky, Ohio, West Virginia, and Virginia during the past five years. Cement as finely ground as any on the market. Guaranteed to pass all the standard specifications.

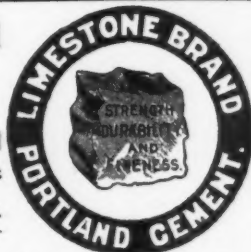
Plant located at Ironton, O., within easy access to seven States, namely, Ohio, Indiana, Kentucky, West Virginia, Virginia, Tennessee and North Carolina.

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Ornamental Concrete Stone  
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LARGEST SHIPPERS OF WHITE SAND IN THE UNITED STATES

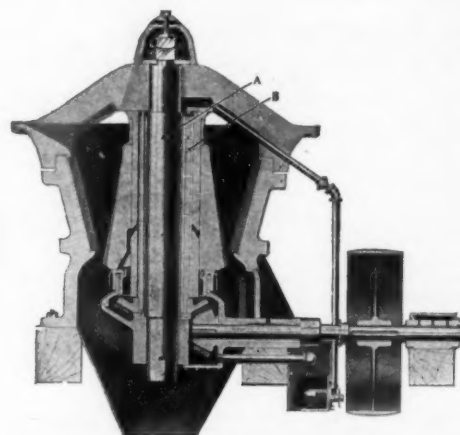
Tell 'em you saw it in ROCK PRODUCTS.

## Letters A and B

in the sectional view, indicate, respectively, the stationary central shaft and revolving eccentric sleeve of the

# SYMONS CRUSHER

The illustration shows the large diameter of the central shaft; the great length of this shaft and of the bab-bitted eccentric sleeve; the immense area of the two main bearings; the short, stocky frame; the simplicity and strength of the entire Symons Gyratory Crusher.



SECTIONAL VIEW OF SYMONS GYRATORY CRUSHER  
A—Stationary Central Shaft.  
B—Revolving Eccentric Sleeve.

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WRITE FOR CATALOG No. 166

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If you wish to attain this you should combine these three important features:

#### Wet Process Face Down Damp Curing

The PETTYJOHN INVINCIBLE Machine does this, and is the only machine that does. Tandem Invincible makes two blocks at once. Price \$65.00 and up. Single Invincibles, \$35.00 and up. With our Triple Tier Racking System green blocks can be stacked three high direct from machine with inexpensive home-made rigging. Plans and blue prints free to customers. It economizes space, reduces off-bearing distance and above all insures slow, even, damp and perfect curing and bleaching.

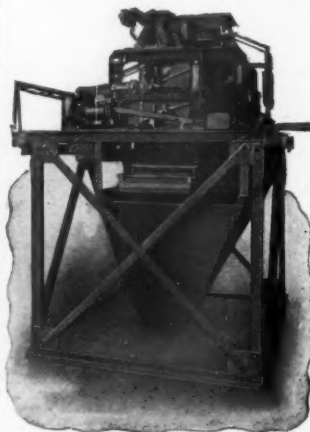
Write for our latest edition of "Stone Making," a book of valuable data, just off the press—FREE

### THE PETTYJOHN COMPANY

614 North Sixth Street

Terre Haute, Indiana

## The RICHARDSON Combined Automatic Scale



Guarantees an absolute mixture of limestone and shale without expense of labor, and with a minimum of attention and cost of maintenance.

Pulverized, granular or lumpy materials handled without difficulty with equal facility.

### Many Successful Installations

### RICHARDSON SCALE CO.

7-8 Park Row, New York

122 Monroe Street, Chicago

Tell 'em you saw it in ROCK PRODUCTS



## STEADY GROWTH

### Concrete Structural Tile Promptly Wins the Markets Upon Its Readily Recognized Merits and Economies.

The conservative, but none the less, steady growth of the concrete structural tile industry and its successful introduction as a building material are the best indications that all the growth has been achieved upon the basic structural merits of the goods and the attendant earning value of investments in plants for its manufacture.

One year ago the initial experimental plant of the inventor at this season was operating six machines and introducing concrete tile to the building trade in the markets immediately surrounding Youngstown, Ohio.

A. A. Pauly, the inventor of the process and machinery for producing this new material, is gratified with the established market that has been created for the home plant. No building is considered within delivery distance that does not use concrete tile. He is putting the goods into office buildings, factories, stores, warehouses and residences, and in place of six machines, the plant is now steadily operating twelve machines and four more are being added to the equipment in order to increase the capacity. His operations have outgrown the accommodations of the experimental plant and he is now arranging to rebuild upon a scale large enough to provide for the operation of no less than twenty-four machines. Thus the initial plant which was first installed for experimental purposes only has grown into a profitable manufacturing proposition for the inventor and his associates, and they are making provision for the constantly growing demand for structural tile in the home market.

The Concrete Products Company, of New York City, started their plant on June 1, beginning with ten machines making several different shapes of tile. Other equipment is being installed as rapidly as the machines can be turned out, up to a complement of twenty-four machines, which will give them a capacity of from seven to ten thousand tile of different sizes and shapes per day. Ross F. Tucker, the prominent concrete engineer of New York, who is president of this company, says that up to the present time their plant, which is located at Flushing, L. I., has been getting into running order, but all the time steadily accumulating a stock of tile. The machines have been gradually brought up to full capacity and turning out a first class product. Both the tile and the equipment are giving perfect satisfaction and the company has orders on file which will keep the plant running steadily. Their sales department has as yet not been organized and all the tile that they have made, about 10,000, have practically sold themselves on sight. The first week was practically consumed in experimenting with their basic material which is trap rock screenings and sand to get the right proportion of these with the Portland cement which is required to make the tile. The tile manufactured at this plant are now being used in a large armory building for the curtain walls at Englewood, N. J., and in a factory building at Newark, N. J.

The Concrete Products Company of New York has taken on the development of a 5,000-acre tract of residence property where no building will be permitted which is not fireproof, and this will consume a large part of the material manufactured at the Flushing plant, as all of the dwellings of this tract will be erected of concrete tile in conjunction with reinforced concrete. The realty department of the Vanderbilt estate is developing another large residence tract seventy miles from New York City and have arranged to erect two thousand dwellings of concrete tile and reinforced concrete of the same type.

The Mount Shasta Volcanic Hollow Tile and Cement Company, Igerna, Cal., got their plant started to manufacture concrete tile by the Pauly patents about the first of May under the management of E. L. Williams. This is a manufacturing town tributary to the great San Francisco market and Mr. Williams reports the unqualified success of his introduction of concrete tile on the Pacific coast. He has found that the first consignment of machinery will not be sufficient to meet the demands and has ordered a duplication. In a recent letter he says, "Concrete tile seems to be the one thing that has been wanted and could not be obtained. The builders want to haul them off before we get time to finish them." He is using for his aggregate a type of rock which is locally known as volcanic ash. This is easily crushed and makes a fine light aggregate having in the one material just about the right proportion of coarses and fines to make a perfect voidless concrete. This outfit was calculated to make 1,000 tile per day and while this average has been exceeded, Mr. Williams says that it is just as easy to sell 2,000 as it is to sell 1,000.

In all probability the total output and use of concrete structural tile in the present building season will pass the million mark, for there are factories now being completed and ordering machinery for prompt delivery at Waterloo, Ia., Rochester, N. Y., Chicago, Ill., Indianapolis, Ind., and at some other of the leading material markets of the country.

The goods is its own best recommendation, being made of wet concrete poured into the mold and then produced by means of a hot process which effects economy and makes the most perfect concrete product from every structural standpoint that has ever been produced.

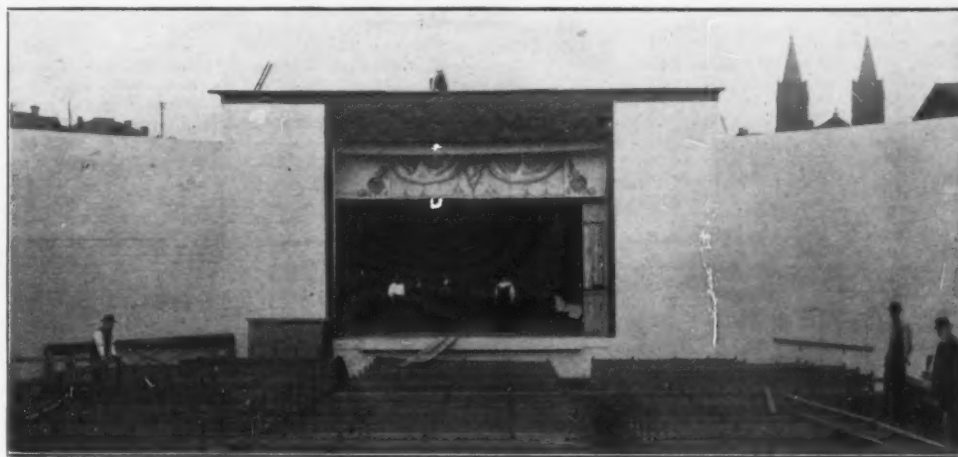
### Theatre of Concrete Tile.

The accompanying photograph shows an open air theater at Youngstown, O., which is constructed entirely of concrete tile. About 3,000 tile were used in the stage. The proscenium is 26' high by 40' wide. The surfaces of the tile walls are treated with a cement paint which makes a very neat appearance. This theater will be used for summer vaudeville entertainments, and it has already been opened to the public and promptly became popular, bearing out in this the uniformly good fortune of everything that has to do in any way with the wonderful new building material.

### Concrete Construction.

To build and equip a modern reinforced concrete building to be used for a city market, \$200,000 has been pledged by leading financiers of Spokane, Wash.

The market is to be built on the lot located on the east side of Washington street, between Second and



OPEN AIR THEATER OF CONCRETE TILE AT YOUNGSTOWN, OHIO.

Pacific avenues, and hence will have a frontage on three streets, 142 feet on Washington street and 280 feet on the two avenues. Work will be commenced at an early date, and it is expected that the building will be ready for occupancy early in August.

### Stable of Concrete Blocks.

Messrs. Duke & Waltrick, Chambersburg, Pa., whose livery stable was destroyed by fire recently, have concluded to erect a new stable of concrete blocks and have given the contract to Harvey Raifsnnyder, formerly superintendent of the Wolf shops. The mason work will be done by George Tritt and Franklin Keagy will have charge of the carpenter work. When completed Duke & Waltrick will have one of the finest stables in this section of the state. It will be fitted up with electric lights and made as fireproof as possible.

### Start New Plant.

LEXINGTON, KY., June 2.—The Continental Artificial Stone & Manufacturing Company, incorporated, started their plant in operation on June 1.

A. Traliot, of Lexington, is president and general manager of the company; A. K. Haynes is secretary, and Messrs. J. H. Boston, H. H. Jones, J. D. Jones and T. B. Tracy are directors.

Lexington will be headquarters for the company, but agencies will be later established in various other cities.

The Henry C. Grieme Company has been incorporated at Amsterdam, N. Y., to manufacture brick, stone and building material. Capital stock, \$135,000. Incorporators: M. Grieme, M. M. Miles and A. C. Le Hahn.

### Test Concrete Blocks.

INDIANAPOLIS, IND., May 15.—Building Inspector T. A. Winterrowd has arranged for a special test of concrete blocks manufactured in the city, to be held at Purdue University some time next week. The test is to settle the contention of several manufacturers that blocks made according to the specifications named in the city ordinance can not meet the compression test required.

Several blocks have been made under the direction of the inspector and his deputies, who saw that the required amounts of cement, sand and gravel were used. These blocks have been allowed to age for thirty days, according to the ordinance, and will be tested, incidentally testing the ordinance.

Last month tests were made at Purdue. While the city ordinance requires that blocks must stand a compression test of 1,000 pounds to the square inch, few of the blocks reach so high an average.

### Obituary.

Edmund G. Johnson, chief chemist of the Western Portland Cement Company, Yankton, S. D., died Monday, May 24th, after an illness of a little over a week, of rheumatism of the heart.

He was in the prime of life and was regarded as a man of high character and great business ability. The news of his untimely death, not only in Yankton but in many parts of the country where he was well known, was received with profound regret.

### Establish Concrete Construction Plant.

GLENDALE, MONT., June 1.—It is announced that the Northern Pacific will at once establish here a large concrete construction plant, to manufacture

concrete piers and slabs for bridge and other works for a large part of the system. Mr. Clements, head of that department, is already located here with his family. The plant will be in operation in time to construct the piers for the bridges on the new Missouri river railroad between here and Mandan, and will also manufacture all material of that character to be used on Yellowstone, Montana and Rocky Mountain divisions.

The Seymour Concrete Company, Seymour, Conn., has been incorporated by Franklin Farrel, Ansonia; Amos W. Morris, Seymour, and Robert Stantzel, Seymour.

The "Kent" mixer is designed to make concrete in the best and most economical way possible, and is, therefore, a continuous, automatic-measuring mixer, in which the entire process—measuring, dry mixing, wetting, wet mixing and discharging—is automatic, mechanical and continuous, thus doing away with hand labor entirely, except what is necessary to get the materials into the hoppers.

The feeding device for each material is simply a flat plate forming the bottom of the hopper, and having a reciprocating movement edgewise. One end wall of the hopper does not reach down to the feed plate, thus leaving a lateral outlet or discharge opening from the hopper, next above the plate.

On its outward movement the feed plate conveys a layer of material from the hopper equal in thickness to the height of this discharge opening, and on its return or inward movement, as the feed plate cannot convey the layer of material back into the hopper, it is withdrawn from under the layer, which then drops into the mixing trough.

The Kent Continuous Mixer is manufactured by the Kent Machine Company, 306 North Water Street, Kent, Ohio.

# QUARRIES

## NEW CRUSHING PLANT

### Of the United States Crushed Stone Company Contains Many Features.

The United States Crushed Stone Company has under course of construction at McCook, Ill., a plant which will contain several innovations in the crushed rock industry. It will be one of the most modern in the country when completed and it is designed for the economical production and handling of crushed rock.

The company's business has outgrown the present plant and while this equipment will be retained, the capacity will be greatly increased by the additional machinery which is being installed and which will be in operation in the near future.

The present equipment is for a No. 8 plant and it is running both day and night. It turns out about 3,000 tons of commercial rock per day. The crusher house of the new plant is built alongside the old crusher house and has the roll house immediately in front of it.

The land owned by the company comprises about 300 acres, of which fifteen acres are being worked. The quarry opening is 1,700 feet by 300 feet and has a depth of twenty-four feet. They have now reached a forty-foot face and are working to reach a forty-foot level. This company uses the Keystone driller for sinking blast holes and were one of the first quarry operators to use this drill. The rock, after it is shot from the ledge, is loaded into the quarry cars by means of one ninety-ton Atlantic and one ninety-ton Bucyrus steam shovel. When the additional machinery is complete an entire new set of cars now being constructed by the Kilbourne & Jacobs Manufacturing Company of Columbus, Ohio, will be put in the quarry. This is a new type car especially designed for the work here and will have a capacity of twelve tons of rock each. These cars have steel skips 7'x9'x42" and arranged so that the skip will be lifted from the trucks and dumped into the roll hopper.

Locomotives in the quarry will deliver the cars to the incline. This incline leads to the roll house, where the preliminary reduction of the rock takes place. The cars will be hauled up this incline, which is 260 feet long and which has a 20% grade, by a 300-horsepower Lidgerwood Manufacturing Company electric hoist.

The skip on the car will be lifted by a 37-horsepower Lidgerwood auxiliary electric hoist and the rock dumped into the roll hopper. These rolls are the new type Giant roll manufactured by the Edison Rock Crusher Company, of Stewartville, N. J., and are the largest that have, up till this time, been built. W. H. Mason, superintendent, and Emil Herter, assistant superintendent, of the Edison Portland Cement Company's plant, gave considerable time and attention to the design of these rolls and their experience has been very beneficial in the design and installation of this set. These rolls are six feet in diameter and have a seven-foot face. They make 170 revolutions per minute. Each roll has a separate drive, the slugger roll being driven by a 250-horsepower motor while the plain roll is driven by a 200-horsepower motor.

The roll house is built on concrete foundations with reinforced concrete columns and a superstructure of steel framing. This was built by the Kenwood Bridge Company of Chicago. The roll room is 50' square. The motor room is 50'x24'. The auxiliary hoist roof is 16'x20' and the main hoist room is 20'x26'. All are of steel construction.

The material, after passing the main rolls, is discharged from the lower hopper onto a retarding roll and into two skip cars of fifteen tons capacity each. These cars are run up a steel skipway 210 feet long and built on an incline of 43°. The car is hoisted to the tower of the crusher house, which is about 125 feet high. The skipway is operated by a 300-horsepower automatic skip hoist especially designed by the Lidgerwood Manufacturing Company. This is operated by a double cable, one and one-eighth inches in diameter.

The crusher house is 43'x45' and is of heavy timber construction. The crushers are arranged in such a manner that the material from either the flux bins or the sizing screens can be delivered to them for recrushing and from them discharged onto elevators and again screened.

The rock is discharged into bins of 140 tons capacity and from these bins fed by rolls into the

two revolving screens, the largest that have ever been installed in a crusher plant. They are 7'x18' and were built by the Power & Mining Machinery Company of Cudahy, Wis. These screens separate the material into three sizes. The over size is dropped into a bin which discharges on a 32" cross belt conveyor and carried to the old plant, where it will be crushed. It is expected to have enough oversize to keep this plant running to full capacity.

The next sized rock from the screens drops into a bin 40'x40'x40'. This material can be loaded into cars by a side door chute if it is desired. If this material is to be reduced still finer it is fed into two No. 6 McCully crushers. The material is then conveyed by a bucket elevator—of which there are two—of 90° center and built on a 68° incline. The buckets of these elevators are 36"x16"x12". These elevators discharge into primary screens which are 4'x24" and which screen the rock for commercial purposes. The rock is dropped into the sizing bins below and either stored or loaded onto the cars by means of bottom dump arrangements. Two No. 4 McCully crushers make finer rock if needed.

The entire plant, including the old plant, is to be operated by individual electric motors, which were furnished by the General Electric Company. The electric power is to be furnished by the Sanitary District of Chicago and brought to the transformer house in current of 12,000 volts.

The transformer house is a brick structure of concrete foundation and trimmings. It is 43'x28'x24', with steel trusses and a gravel roof. It will contain six transformers, which will transform the power to 440 volts. All wires from the transformer house to the individual motors are laid in underground vitrified conduits, installed by the Falkenau Construction Company, of Chicago. The plans for the machine shops are now being prepared.

The concrete work in the buildings was all made on the ground. The trimmings on the transformer house were cast in wooden moulds and are splendid work. The concrete was composed of an aggregate of Marquette and Universal cement, with the finer screenings from the crushers.

The plant was designed by William Woodhall, Jr., and he is the engineer of construction.

George Lenzi is the superintendent of the plant.

The crushing machinery, with elevators and screen, were furnished by the Power & Mining Machinery Company through the Chicago office, of which L. J. Hewes is the manager.

### Rock Crusher Starts.

COVINGTON, IND., June 1.—Work was started recently with the big gravel crusher which was erected this year at the Interstate Sand and Gravel Company's plant. This promises to be a big industry for Covington. The crusher will have a capacity of 500 yards per day, when running full time. They

have a large amount of orders ahead, and work promises to be brisk for the entire summer.

A steam shovel loads the gravel onto a large belt or conveyor which in turn carries it to the top of the crusher. The gravel is then carried through a series of screens and the larger stones carried to the crusher, which is driven by a large, 50-horsepower steam engine. The finished product is dumped into bins, from where it is loaded into cars for shipment. There are two grades of sand and two of gravel, and as fine a quality as can be found anywhere.

### Add Another Crusher.

COLUMBUS, O., June 21.—The Sciota Stone Company have ordered additional machinery for their crusher plant here. They will install a number 6 McCully crusher to assist the number 8 and number 5 they now have.

### Stone and Ore Crusher for Furnaces.

IRONTON, O., June 19.—The Martin Iron and Steel Company have installed a number 6 McCully crusher, manufactured by the Power and Mining Machinery Company at their plant here. This crusher is used to crush the limestone and iron ore. This company, after repeated tests, have found that finely ground rock and ore feed to the furnaces produces a better pig iron than the coarser materials.

### The Webster Stone Company.

FITZGHUGH, OKLA., June 7.—W. H. Webster advises us that: "The Webster Stone Company has taken over the plant of the Seminole White Lime Company at Sasakwa. We have abandoned the lime business and moved the crusher to this place, which is on the Frisco road. We are installing an up-to-date plant, with a capacity of four to five hundred yards of crushed rock per day. We expect to be ready to ship rock by July 1. We have a fine quarry opened and ready for the drill. We are always glad to receive ROCK PRODUCTS."

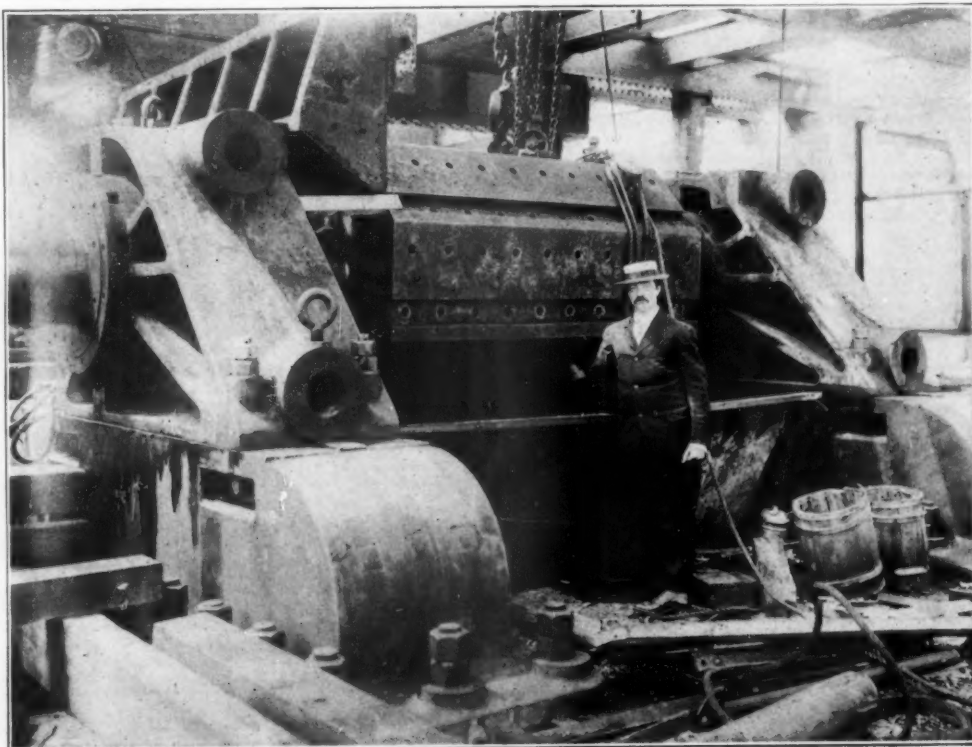
### Stone Crusher Begins Work.

STOCKTON, MINN., May 20.—The huge rock crusher which will be operated by the Chicago & North-Western Railway between Stockton and Lewiston, will begin operations with about eighty men at work.

This crusher is one of the largest in the state and will have a daily capacity of from thirty-five to forty cars.

The stone taken from the quarry will be used in ballasting the road from Chicago as far west as Pierre, S. D., and will be valuable in improving the roadbed.

The crushers to be used in the work are of the very latest model and all of the new appliances, which go to make the plant perfect, have been installed.



INSTALLING EDISON GIANT ROLLS IN THE PLANT OF THE UNITED STATES CRUSHED STONE COMPANY'S PLANT AT MCCOOK, ILL. WM. WOODHALL, JR., ENGINEER AND DESIGNER OF THE PLANT, IS STANDING IN THE FOREGROUND.



### State Aid Road Improvement in Ohio

BY JOSEPH C. WONDERS, OHIO STATE HIGHWAY COMMISSIONER.

The present state aid law of Ohio provides that an application can be made by the county commissioners of any county for the construction of not less than one mile of a public road within the county, the work to be done under the charge and direction of the state highway department, and the cost is apportioned in the following manner: One-half of the cost is paid for by the state, 25 per cent by the county, 15 per cent by the township and 10 per cent by the property owners.

The appropriation for 1908 was \$5,000 per county, and under the provisions of said act, in 1908, twenty-two counties applied for the construction of roads. Under this law, counties which have already constructed improved roads may apply for the money to be used in the repair of such roads, and the money is expended by the local authorities. In the early history of the work, most of the applications were for this purpose, as a large majority of the counties of Ohio have been engaged in road improvement for many years.

For the year 1909, 35 of the 88 counties of the state applied for state aid in construction, 52 counties for pike repairs, and one county failed to take advantage of the apportionment. Three of the counties which originally applied for pike repairs have since changed their applications from pike repairs to construction, making 38 counties that will construct this year. Some of these counties will construct three separate roads.

The law requires that state aid roads must not be constructed of less length than one mile. Under this plan, 36 roads will be constructed of macadam, and 12 will be constructed of brick. Owing to the fact that paving brick is manufactured over a large part of Ohio, brick roads in many instances can be constructed at a price very little in excess of the cost of macadam roads. A contract was let last week for a road in Wayne County, which is to have a brick pavement 10 feet wide, with 5x16-inch concrete curbs and macadam backing 24 inches wide by 8 inches deep, abutting against the outer line of curb; the brick is to be laid on 4 inches of Portland cement concrete, and a cement grout filler, with expansion joints, is to be used, and an earth side track is to be constructed, the total width of roadbed being 36 feet. The contract price for one mile of this road is \$11,500, which is but very little in advance of the cost of a macadam road.

The amount appropriated for this year for state aid in road building was \$486,000. This will give nearly \$5,600 per county.

There was an additional appropriation of \$10,000 for the construction of an experimental road, for the purpose of ascertaining the value of the different methods of dust prevention. The work on this experimental road has not yet been commenced on account of a very rainy season. In building this road it is the intention to use sections of 400 feet in length by 16 feet in width for each of the different methods of construction adopted. It is hoped that this work will furnish some valuable information regarding the worth of the different dust preventives offered for use on macadam or earth roads. In response to the invitation sent out to the various manufacturers of dust preventives, more acceptances for the construction of sections of this road were received than the amount of money appropriated will permit being built, and it will be necessary to decline the use of some of the offers.

An appropriation of \$5,000 was made for the purpose of making a highway map of the state. This is already well under way, and it is expected that it will be completed within the next few months. With the amount of money appropriated it will not be possible to publish a lithograph map, but it is the intention to prepare the copy and issue a zinc etching map of each county.

An appropriation of \$5,000 was made for the purpose of determining the value of the limestones of this state for road-building purposes, and with this end in view a laboratory will be equipped with the most recent apparatus that has been devised. This laboratory will also be equipped for testing paving bricks and cements. Prof. K. B. Ward, of the faculty of the Ohio State University, has been employed to take charge of this laboratory, which is to be located in the university building, and he will attend to the collecting of samples from the different quarries of the state. The results of this work will be embodied in the bulletins which will be issued as the work progresses.

The use of money appropriated by the state for the various counties for pike repairs, in the manner provided by the present law, advances the cause of good roads but little, as most of the counties reduce the amount of their levy by the amount they expect the state to appropriate, and, as a consequence,

there is no more work done on the roads in those counties than there was previous to the appropriations by the state. The highway department endeavors to enlist the interest of the authorities of all of the counties to use their money in construction of good roads, rather than for pike repairs. It is unfortunate that the Ohio law was so written as to permit the use of this money for repairs, but this concession had to be made in the beginning, in order to get the support of the members of the legislature from counties which had already constructed hundreds of miles of good roads. It is to be hoped that in the near future, with the growth of the idea of the construction of roads by state aid, that all of the counties will be satisfied to take their money for construction, making it possible to change the law so as to strike out the provision for repairs.

### Good Roads Bill by Governor.

ALBANY, N. Y., June 15.—Governor Hughes signed the bill appropriating \$5,000,000 for good roads construction work, \$1,500,000 to be available at once and the remainder by October 1.

The governor also signed the bill appropriating \$10,000 for an inquiry into the question of establishing barge canal terminals. The state engineer, the superintendent of public works, the chairman of the barge canal advisory board of consulting engineers and the special examiner and appraiser of canal lands are constituted a commission for the purpose of studying the question providing of terminal facilities for the canals of this state.

The commission is to visit and inspect the various harbors connected with the canals, as well as all harbors in this state where freight carried on the canals may be either received or discharged. The commission is to report to the legislature in detail its recommendations as to the harbors and canal terminals where, in its judgment, special facilities for receiving or discharging canal freight should be provided; as to available sites for such terminal structures; as to the amount of land necessary to be taken at each point for such purposes; as to the character, extent and probable cost of construction and maintenance of each of such terminal structures; and the revenue, if any, possible to be derived therefrom.

### Means More Canal Millions.

If this plan is carried out it will mean the expenditure of several more millions of dollars for the barge canal.

In vetoing the bill for a survey of Jamaica and Flushing bays, with a view of extending the New York harbor facilities, Governor Hughes says:

The object sought to be attained by this bill can receive proper consideration in the course of the inquiry authorized by the Cronin law to provide suitable terminal facilities for the canals of this state's commerce. I have approved the Cronin bill because it is wider in scope than the bill relating solely to the connection between Flushing and Jamaica bays and permits the investigation of all questions relating to proper terminal facilities.

In vetoing the various appropriations for improving rivers in the state, Governor Hughes made public a memorandum today, saying:

The extent of the demands upon the state treasury compels the conclusion that these expenditures and others of the same class which are found in the supply bill cannot be allowed. At the same time the number of requests for appropriations for river improvements in various parts of the state and for protection from loss by floods calls attention to the necessity for providing a proper system by which the needs of these communities can be met in a just way.

Under the present system legislative act or items in appropriation bills are sought which place the entire cost of the improvement upon the state. But it is apparent that in view of the limits of the state's income and the pressure upon it, a proper distribution of the expense of such improvements should be made so that the cities, towns and counties directly benefited may bear what may be found to be their proper share.

### As to River Improvements.

The statute relating to river improvements under the direction of the state water supply commission has been amended this year to make its plan more workable, and if anything more is needed to make it entirely adequate to the just necessities of further improvements in various parts of the state it can readily be supplied by further amendment.

We should thus have a method by which every exigency may be promptly considered, its requirements met and the cost fairly apportioned. I hope that this subject will have early attention and that the whole matter will be put upon a proper basis.

Governor Hughes also signed these bills:

Appropriating \$2,000 for plans and specifications for remodeling the state house for the use of the court of appeals.

Appropriating \$300,000 for the Hudson-Fulton celebration.

To permit the establishment of river improvement districts by the state water supply commission upon application of a locality to be benefited, and further provide that the cost shall be assessed upon the property benefited through the regular local tax assessment channels. The bill is designed to make the bonds issued to secure money for the cost of proposed improvements more attractive to purchasers.

Establishing the office of county comptroller in any county.

The present state board of pharmacy is to continue in office, Governor Hughes tonight vetoing the bill establishing a new board of pharmacy, under the regents.

Governor Hughes also vetoed the bill in the interest of the New Theater, near Central Park. It permitted the traffic in liquors within 200 feet of a building occupied as a private school, with the consent of the person or corporation using the building for that purpose.

### Recommended By Illinois Road Commission.

To the trade the value of concrete in bridge building is well known, but the endorsement of this material, such as given recently by the Illinois Highway Commission, in its report on the subject of bridges, is a valuable acquisition to the literature on this subject. The report, as presented by A. N. Johnson, Assoc. M. Am. Soc. C. E., state highway engineer, in part is as follows:

Practically all the bridge money spent today is really for bridge maintenance rather than for the construction of new bridges, including under maintenance renewals of bridges which have become useless. If, therefore, some plan could be devised by which this present constant maintenance expense could be avoided, it should receive earnest and immediate attention.

After a careful study and actual experience with conditions in all parts of the state, it is recommended that all bridges of 50-foot span or less should be constructed of concrete or reinforced concrete, as this is the most permanent form of construction known to engineers today.

The plan proposed is for the township to have a careful inspection made of all bridges and the required sizes noted and listed. There would be found, for instance, to be a certain number of 3-foot openings, a certain number of 10-foot openings, and so on. Plans for the various sized bridges could then be made and the total amount of work necessary and the estimated cost ascertained. The township would then undertake to build all of these bridges within one or two years, securing the necessary funds by issuing bonds for the required amounts. The work could be let in one contract of sufficient magnitude to secure keen competition, and from the fact that many bridges would be duplicated, a contractor could undertake the work at a much lower figure than would be possible if the bridges were contracted at different times.

The result would be the canceling of the greater portion of the bridge tax that the towns are now called upon to pay, and the money now apportioned for bridge maintenance would in most cases be ample to pay the interest and sinking funds on the bonds. From the fact that the structures that would be built are of such a permanent character, it is in every way just that the cost should be distributed over a number of years and would entirely justify bonds running for at least twenty-five years. Such a plan, however, should not be undertaken without certain limitations, to insure, first, the proper design of these bridges and, second, their proper construction. Such additional legislation as might be necessary to make this plan effective should require that all plans for this work should be approved by the state and the work carried on under state specifications. This would be necessary to safeguard and secure to the taxpayers the standard of design and construction that work of this character requires and public safety demands.

### Production of Trap Rock For Paving.

MARQUETTE, MICH., June 19.—A new upper Michigan industry which promises to attain large proportions is the quarrying and crushing of trap rock for use in street and highway construction. Marquette has already one commercial plant of the kind, a second one is about to go into commission here and a third one is projected in the copper country, where it is proposed to embark in quarrying operations on Keweenaw Point on an extensive scale.

It was in Keweenaw County that State Highway Commissioner Earle planned to locate a workhouse for the purpose of utilizing convict labor in manufacturing road-making material for shipment to all portions of the commonwealth. The Legislature refused the necessary appropriation, but the practical possibilities of the scheme have not been lost sight of and private capital now has under consideration the matter of engaging in the business on a scale of large proportions.

Practically all the rock now quarried in Marquette is shipped to Detroit and Cleveland, and last season it was impossible to fill orders received for the product.

### Deep Hole Drilling In Quarries.

Crushed rock operators in the vicinity of Chicago as well as other places are taking a vital interest in the results of drilling with churn drillers. The mammoth crusher plants which are now nearing completion will be equipped to crush thousands of yards of rock per day to supply the Chicago market. It has been taxing the engineers to solve the large capacity question without increasing the cost of production. The crushing question has been taken care of by the large gyratory crushers. To keep them fed has been overcome by the shovel manufacturers, who can deliver the stone faster and easier than by the old methods. The drilling and blasting proposition has now come in for its share of consideration. Deep holes must be sunk in order to move larger quantities of rock and the churn driller people are demonstrating the usefulness of their drills for this purpose. The churn drillers are practical and cost accounts, kept, show an economical means of drilling.

An interesting test is being made by the Universal Crushed Stone Company in their quarry at Ives, Wis., on deep drilling. On June 14 they blasted a ledge which moved 20,000 cubic yards of rock.

Four holes were drilled with a Keystone driller each 5½" in diameter, 105' deep, 15' apart and 25' from the face of the ledge. The holes were loaded full of dynamite up to about 25' within the top and then tamped with screenings. Four thousand five hundred pounds of 40% Aetna dynamite was used. When the shot was fired the whole body of rock was raised several feet from the bottom. The rock was broken so fine that the superintendent did not think it would be necessary to use the smaller drills to break up the rock.

Jas. and A. C. O'Laughlin have installed a Keystone driller at their Bellwood quarry, which is the first to be equipped with a motor and electric power. With this driller they are averaging a 5½" hole 5' per hour. By one week's operation they drilled four holes 66' deep.

The results so far have been very satisfactory, one shot has already been fired and they are now preparing for another.

### The National Highways Protective Society.

The National Highways Protective Society is the name of an organization recently incorporated in New York. It intends to branch out, and form subsidiary organizations in other cities for the pursuance of its objects.

The objects of the society, as officially set forth, are:

"To prevent the improper and unreasonable use of the public highways and public roads and places by the owners and users of horses, carriages, bicycles, automobiles and all other vehicles; to enforce and protect the rights of the members of this corporation and the public in the reasonable and proper use of such public highways, public roads and places; to endeavor to secure the construction and maintenance of good roads by public authority; and in furtherance and not in way of limitation upon the objects enumerated, to endeavor to bring about reasonable and uniform rules and regulations for the use of the public highways, roads and places throughout the United States of America; to aid in the enforcement of the laws in respect thereto, and so far as may be lawful to aid in securing any such changes or modifications thereof as may be found necessary or proper."

Under this general statement, the purpose of the society, which is composed mostly of automobile enthusiasts, is to secure and furnish evidence and thereby secure the punishment of reckless speeders, each member constituting a committee for taking the time, place and number of any recklessly driven motor car, and reporting same to the central office. In addition to this, officers are employed, and furnished with motor bicycles with speedometer attachments, to cause arrests and furnish evidence to secure convictions.

There is a membership fee of \$5 a year. Outside the amount thus produced, voluntary subscriptions are relied on to carry out the purposes of the society.

The officers are: President, Henry Clews; vice-president, A. D. Middleton; secretary, Edward S. Cornell; treasurer, Gilford Hurry; counsel, Charles S. Whitman.

### Lightning Flash Fires Big Shot.

FOND DU LAC, WIS., June 1.—A half acre of solid stone, 22 feet in thickness, was lifted by a single shot at the Knowles quarry of the Standard Lime and Stone Company on Saturday.

Saturday afternoon Superintendent Murphy had completed his plans for one of the biggest shots that had ever been fired at the quarry. It was proposed to fire eighteen holes, in which a charge of 2,200

pounds of dynamite had been placed, and which it was estimated would remove a half acre of limestone 22 feet in thickness. The holes had been drilled deep, the dynamite placed, and all the electric exploders attached, though as yet no connection had been made with the battery, some 500 feet away, and by means of which the exploders are discharged simultaneously.

A storm was approaching and the superintendent feared the rain might spoil his work. The lightning was already flashing, but unmindful of danger he picked up the two lead wires and commenced running them through his hands as he approached the ledge in order to avoid short circuits. When within a dozen feet of the ledge and almost ready to return to connect the dynamo battery, there came a flash of lightning, followed by a gigantic upheaval of the mass of stone. The lightning had discharged the electric exploders and as clean a piece of blasting had been accomplished as was ever known at the quarry. Singularly enough the stone was hurled in the opposite direction from the men who stood on the ledge.

The instance is the first in this section, and it is believed to be the first in the country where a lightning flash has made such close connections with the actual operation of a stone quarry and done its work without inflicting any damage whatever. The escape of Superintendent Murphy and his assistants from injury is counted little less than a miracle. In the ordinary work of discharging the electric exploders with a dynamo, the dynamo and operator are stationed at least 500 feet from the ledge and the operator invariably occupies a protected position.

### Receives Road Contract.

FINDLAY, OHIO, June 9.—The Bluffton Stone Company was awarded a road building contract in Mercer County Saturday at \$3,800. The Lewisburg Stone Company, controlled by the gentlemen who own the Bluffton Stone Company secured another stretch of pike at \$6,999.

### Will Install Crushing Plant.

CORONA, CAL., June 1.—The Fairchild-Gilmore-Wilton Company, of Los Angeles, has a contract at Redondo that will require daily shipments of rock from the company's local quarry averaging 160 tons. The concern is arranging to install a \$30,000 crushing plant.

### Ship Large Quantities of Stone.

IVES, WIS., June 3.—The Universal Crushed Stone Company, of Ives, is shipping large quantities of stone to the city of Chicago where it is being used to improve and extend the surface street railways of the city. The local concern has the contract to supply the City Railways Company with stone needed. This will keep the company working overtime nearly all summer.

### Install Electric Plant to Operate Crusher.

NEW HAVEN, CONN., June 6.—Donaldson & Boyce are now installing an electric plant for operating part of their crusher plant at Tide Water Trap Rock quarry. The company has blasted out a very large amount of stone this spring and expects to run the plant at full capacity all summer. They have enlarged the storage bins to facilitate loading of barges and will have a most up-to-date plant when the new equipment is installed.

### County to Buy Quarries.

LOS ANGELES, CAL., June 1.—Lengthy recommendations of the Highway Commission, that the supervisors close options held on rock quarries in San Dimas Canyon and near Pacoima, on the Southern Pacific, were adopted yesterday.

It was recommended that the county install a complete crushing plant at the Pacoima quarry, capable of turning out 125 tons of crushed rock an hour. As regards the San Dimas quarry, it was recommended that bids be invited from contractors to install a plant there. It is planned that the county shall have first call on the output for building roads.

A recommendation that specifications be prepared for supplying the county with crushed rock was adopted.

### Will Enter Rock Crushing Business.

GOVERNEUR, N. Y., June 1.—F. A. Wright, who for the past year has been general manager for the New York White Marble Company, is about to embark in the stone crushing business. Mr. Wright has leased the stone crushing plant of the Northern Crushed Stone Company and a force of men are now at work putting the plant in condition. Mr. Wright will secure his supply of stone at the marble works and about twenty men will be employed.

### Change of Name.

The name of the Milligan Brothers, Muncie, Ind., has been changed to the Muncie Stone and Lime Company.

### New Incorporation For Columbus.

The Capitol Lime Stone Company has been incorporated at Columbus, Ohio, by Hon. C. V. Trott, of Mt. Vernon; C. W. Coe and C. H. Bishop, of Centerville; A. L. Ralston and Adam G. Innis, of Columbus. The capital stock is \$125,000, of which \$75,000 is in common stock. This has all been subscribed. The \$50,000 preferred stock will be sold. The company has acquired valuable limestone land about three miles out of Columbus and will operate a quarry. Its product will be building stone, crushed stone and fluxing or furnace stone. The company will have its offices at Columbus.

### Officers Re-elected.

At the annual meeting of the Bessemer Limestone Company held at Bessemer, Pa., recently, J. G. Butler was re-elected president, Charles M. Crooks treasurer and general manager, and C. C. Blair secretary. A number of improvements have been made at the plant during the past year. All the officers were re-elected.

### Lease Stone Quarry.

DELAWARE, OHIO, June 3.—The White Sulphur Stone Company has secured the possession of the lease of the Scioto Stone Company on the quarry owned by F. L. Campbell and located west of the Hocking Valley Railroad. The quarry has been operated by the Scioto Stone Company on a division of profits with Mr. Campbell. The White Sulphur Stone Company has purchased the machinery in the quarry and will begin operations at once. The lease extends for eight years.



AFTER A SHOT IN THE UNIVERSAL CRUSHED STONE COMPANY'S QUARRY, IVES, WISC. 20,000 CUBIC YARDS OF ROCK MOVED.



### Open New Quarry.

MINNEKA, MINN., June 11.—The United States government has opened a new stone quarry for river work two miles this side of the town of Minneka on the top of a bluff by the river. A force of twenty men is employed at present, but this number may be increased before the season's work is done. William Gentzkow, of Minneka, and Claude Mogreen are superintending the work.

Unlike the quarry at La Moille, which transports the rock to barges on the river by a cable line from the top of the bluff the Minneka quarry will have a tramway similar to that used at the Biesanz quarry at Minnesota City. A survey for the road has already been made and it will be built this summer. It is expected to take out 30,000 cubic yards of large limestone rock for rip rap work to be used principally in the Dushane or upper river improvement district, although the tramway will be constructed so that rock can also be transported on the railroad and for that purpose a switch track will be laid.

During the week Mr. Mogran, who is superintending the blasting, has removed the sandstone covering and discovered as expected that there is a fine drift of limestone located there, the equal to any in this vicinity for building purposes. Mr. Gentzkow will superintend the measuring and loading of the rock. It is very probable that the Minneka quarry will in time be as productive as the La Moille quarry, where from fifty to sixty men are now employed every season. Last year the La Moille quarry turned out 20,096 cubic yards of rock.

### Quarries Open Many Years.

WILLIAMSBURG, PA., June 1.—Piney Creek is a small stream having its source in the southern end of Blair County and emptying into the Juniata River at Franklin Forge, two miles west of Williamsburg.

In the spring of 1881 Frank R. Schmucker conceived the idea of burning lime and utilizing the abundant quantity of limestone deposits in the hills, and erected a plant on the creek, about two miles from Franklin Forge, and continued at that business for about three years, turning out a superior quality of lime. At the expiration of that time it was found that the stone could be used to better success if pulverized for the manufacture of glass, and a company was formed, consisting of Messrs. F. R. Schmucker, S. R. Schmucker and Calvin R. Fluke, and the erection of a crusher and pulverizing machinery was commenced.

A fortune was expended in perfecting the machinery and getting it in proper shape for doing the work. Pluck and perseverance conquered all difficulties and large quantities of ground limestone, and also crushed rock, were shipped to Pittsburg and other points, and they shortly after built a second plant, known as No. 2.

In 1890 No. 1 plant was entirely destroyed by fire, entailing a great loss, and about two years after No. 2 plant was destroyed by the same element.

In the meantime, about the time of the Johnstown flood, high water in the creek caused much damage, and, taken all together the firm had expended about \$60,000 on the creek without much material benefit. Undismayed, however, they continued operations. Both plants were rebuilt and prosperity at last was theirs.

In 1895 A. J. Morris, of Tyrone, bought out the interests of Messrs. S. R. Schmucker and C. R. Fluke, F. R. Schmucker retaining his interest and becoming manager of the works. They were then shipping an average of about twenty-six carloads of crushed rock daily, having discontinued the ground stone business in 1890. The vast quantity of stone contained in the tract on both sides of the creek, clear down to Franklin Forge, was leased by Mr. Schmucker.

About that time Mr. Schmucker had numerous inquiries in regard to the dolomite secreted in the hills.

Frank Schmucker discovered the dolomite while sitting on a rustic bench at a spring. While gazing into the clear water of the spring, he saw what the action of the water had made quite plain. He made an investigation and found what he had been long looking for and went to work at once and opened up a fine vein. From the small start, employing only five men, by Mr. Schmucker, the limestone business has grown into gigantic proportions.

In 1899 Messrs. Morris and Schmucker sold out to the American Steel and Wire Company, and Harry A. Sparr, who had been a clerk in the employ of Morris & Co., later on became superintendent of the works, and has now rounded out twenty-three years in the limestone business. The following figures apply when the different companies are running at their full capacity:

The American Steel and Wire Company ships thirty carloads per day, employs about 150 men and

have enough stone in sight to keep them going for fifty years.

The Pittsburg Limestone Company has for its superintendent a most courtly gentleman, William D. Libby. This company operates one quarry at Franklin Forge, and all except one on Clover Creek. This company ships 100 cars per day and employs 500 men.

The St. Clair Limestone Company is on the old Patterson farm, on the opposite side of the river from Franklin Forge and is managed by William Bice, a practical man, as superintendent. They ship twenty-five cars per day and employ 140 men.

The Blair Four Limestone Company, a short distance east of Mount Etna, is also managed by Mr. Bice, and this company ships forty cars per day and employs 250 men.

The Juniata Limestone Company, located at Carlism, in sight of Cove Forge, is ably managed by John Brown, employs 140 men and ships twenty-five cars per day.

The Josephine Limestone Company is located on the site of Rockdale Foundry, on Clover Creek, and has a superintendent, Edward Lang, a young man, who has grown up in the business, and ships twenty cars per day and employs seventy-five men.

It can thus be easily seen to what this business has grown from the small start in 1881 until now, when over 13,000 tons of limestone are shipped daily and over 1,200 men are employed, with a total pay in wages of over \$2,000 per day.

### Crushed Rock Company Formed.

MINERAL WELLS, TEX., June 21.—Articles of incorporation of the Mineral Wells Crushed Stone and Lime Company have been filed with the Secretary of State by parties here. The officers are E. B. Ritchie, president; C. E. Read, vice-president; W. I. Smith, secretary and treasurer, and A. A. Goodwin, general manager. The company has purchased a crushing plant of 300 tons per day capacity, which will be put upon the ground at once and operations begun. The plant will be located eleven miles north of here on the Weatherford, Mineral Wells and Northwestern Railway, where it is said there are extensive beds of fine limestone. The company has had several samples of the rock tested, chemically and otherwise, and the officers of the company claim that such tests have demonstrated that the rock is superior to the Jack County product. The company expects to be ready to begin marketing crushed stone in about two weeks' time.

### Amendment to the Constitution of Kentucky.

The Bosworth-Wyatt Good Road Amendment to the Constitution of Kentucky was passed by the last Legislature by its almost unanimous vote and is to be voted on at the next November election, 1909, by the voters of Kentucky.

This constitutional amendment was the result of a very careful study of the present condition of the Kentucky roads and its system of road laws. Under this constitutional amendment a county may become indebted for road purposes to the extent of 5 per cent of its assessed valuation, instead of 2 per cent, which is the limit allowed under their present constitution. It is also provided, under this amendment, that a county may make an additional tax levy of 20 cents on the \$100 to pay the interest and create a sinking fund for the bonded debt created to build roads. This, as will be seen, enlarges the powers of the counties so that even the poorest counties may be able to build and maintain improved highways.

This good road constitutional amendment also reads, "That the credit of the Commonwealth may be given, pledged or loaned to any county of the Commonwealth for public road purposes." It does not say that state aid shall be extended, but it says that state aid may be extended. In other words it leaves the Legislatures of Kentucky's future generation untrammelled to deal with this great proposition as to its public thoroughfares and privileges them to enact such laws relating thereto as they may think right and proper for the best interest of Kentucky and the welfare of her people.

We believe it will not be long before the national government will follow the example of every other leading nation of the world, and will take a hand in helping the states in this important work of building and maintaining its public roads by appropriations, as is now proposed by pending legislation in the national congress.

It is the purpose of Kentucky that they be unhampered so that their state can be in a position to be the recipient of that national aid under whatever conditions it may be offered and at the very first opportunity, in which position the adoption of the constitutional amendment would place this state.

The Kentucky Good Roads Association was organized for the purpose of making a campaign for this amendment. They desire to get this amendment to the constitution and an explanation thereof before

all the voters of Kentucky so that they may understand it and its meaning. If this measure becomes a part of the constitution it will do more for Kentucky than all else.

The amendment in full is as follows:

The credit of the commonwealth may be given, pledged or loaned to any county of the commonwealth for public road purposes, and any county may be permitted to incur an indebtedness in any amount fixed by the county, not in excess of 5 per centus of the value of the taxable property therein, for public road purposes in said county, provided said additional indebtedness is submitted to the voters of the county for their ratification or rejection at a special election held for said purpose, in such manner as may be provided by law, and when any such indebtedness is incurred by any county, said county may levy, in addition to the tax rate allowed under section 157 of the constitution of Kentucky, an amount not exceeding 20 cents on the hundred dollars of the assessed valuation of said county for the purpose of paying the interest on said indebtedness and providing a sinking fund for the payment of said indebtedness.

Section 177 of the constitution of Kentucky forever prohibits the state from lending its aid to, or in any way helping the counties in road building, or taking any part whatever in behalf of the cause of good roads.

Section 158 of the state constitution limits the power of any county to become indebted more than 2 per cent of the assessed valuation, thus making it impossible for the greater number of counties to raise sufficient funds to any road building at all.

Section 157 of the state constitution provides that a county cannot levy exceeding 50 cents on each one hundred dollars of taxable property therein for any purpose whatever, thus making it impossible for many of the counties to provide sufficient means to create a sinking fund and pay interest on the debt created to build roads.

As a consequence of these limitations and restrictions of the powers of the counties, and also of the commonwealth of Kentucky, good road building in Kentucky has been a thing of the past since the adoption of the present constitution.

This constitutional amendment will remove these restrictions, which are a barrier to the passage of such a system of road laws by the legislature, as will enable the counties and the state of Kentucky and perhaps the federal government to join hands in this important work of building and maintaining a system of improved highways in all parts of Kentucky, the accomplishment of which would do so much for the advancement, progress and development of Kentucky, and would mean more than all else for the comfort, convenience and improved condition of all her people. If this constitutional amendment receives a majority of the votes at the coming election, it will then be possible for Kentucky to pass such a system of good road laws as are in effect in the states of New York, New Jersey, Connecticut, Michigan, Massachusetts, California and Pennsylvania, and, in fact, every other state where progress and advancement is being made in building and maintaining good roads, while Kentucky is at a standstill.

If you are in favor of good roads, vote and work for the Bosworth-Wyatt Good Road Constitutional Amendment and lend a helping hand in making it possible for every county in the state to have the very best improved highways.

### The Tarviated Road.

It is only a few years since the Macadam road was regarded as something which was soon to be relegated to the past on account of its inability to resist the destructive action of automobile traffic. Many county supervisors began to let their roads go to the dogs because the cost of maintaining them under the new traffic conditions was exorbitant. Even new road surfaces that under the old conditions would have been good for five years or more with trifling repairs, were completely stripped by the automobiles in a single season. In towns and city boulevards other pavements such as brick and asphalt became necessary, and there was a fair prospect of a steadily dwindling market for crushed stone for Macadam roads.

This condition has now, however, been completely changed by the appearance of a material called tarvia, a proposition that was originally developed in France where the automobile problem first became acute. Tarvia is a preparation of coal tar pitch, made in three grades of varying density, to suit various road conditions. When applied to a Macadam road it filters into and fills all interstices surrounding the particles of stone with a tough rubbery matrix. Its action is similar to that of cement in concrete and is noticeably quiet under traffic. The tarviating process makes the road entirely dustless and reduces the cost of maintenance to a minimum.

The outlook for the extension of Macadam roads has been completely changed by the introduction of this process. Macadam is now available for many new uses. Many towns, for instance, which would desire to pave their main streets with brick can now use tarviated Macadam at much less cost and with equal satisfaction. The great success of the tarvia treatment would insure the rapid extension of Macadam throughout the country.

Crushed stone men and manufacturers of road machinery ought to interest themselves in the new process and use it as an answer to the objections they will find in many quarters to ordinary Macadam. An energetic salesman for crushed stone will find that when the tarvia process is given due consideration the market for his stone is greatly increased.

The Barrett Manufacturing Company have just issued a very instructive illustrated booklet on the tarvia treatment, and will mail same free to anyone interested on request.



## National Lime Manufacturers' Association

Meets Semi-Annually.

### OFFICERS.

William E. Carson, Riverton, Va. .... President  
Charles Weiler, Milwaukee, Wis. .... 1st Vice-Pres.  
Walter S. Sheldon, Hamburg, N. J. .... 2nd Vice-Pres.  
M. H. Deely, Pittsfield, Mass. .... 3rd Vice-Pres.  
C. W. S. Cobb, St. Louis, Mo. .... Treasurer

### EXECUTIVE COMMITTEE.

William E. Carson, ex-officio; Chas. Warner, Wilmington, Del.; T. E. Fleischer, Sheboygan, Wis.

### Lime Meeting Postponed.

President Wm. E. Carson, of the National Lime Manufacturers' Association, writes us that after a consultation with the executive committee they have decided not to hold the summer meeting. It was announced that it would be held at Atlantic City.

### New Lime Company.

The Tiffin Lime and Stone Company was recently incorporated at Tiffin, Ohio, with a capital of \$40,000. The incorporators were A. B. Greiner, L. R. Greiner, P. L. Moicher, W. L. Hertzner and C. A. Babcock.

### A New Rotary Kiln Installed.

W. H. Kemler, of the Basic Products Company, Kenova, W. Va., writes us as follows:  
"We are now installing a modern rotary kiln plant for calcining lime, and will produce a wet process high calcium and magnesium hydrate under process, patent applied for. Our equipment has been contracted for with the Allis-Chalmers Company, all to be gas engine and electric drive, steel buildings and storage arrangement for several thousand tons of crude material. We also have in view the erection of annex plants for production of liquid carbonic acid, magnesium carbonate, barium salts and compounds and calcined refractory clays."

### Ohio Concern Incorporated.

The Harris Stone and Lime Company, Webster, Ohio, has filed articles of incorporation with a paid-up capital of \$10,000. The incorporators are J. G. Harris, W. G. Smart, E. H. Shelman and W. M. Smart.

### New Company Formed.

A new company has been formed in Rockford, Ill., and the charter permitting it to do business has been received and is now on file at the court house. The company will be known as the Rockford Hydrate Lime and Supply Company, its capital stock being \$50,000, and the business of the company will be the manufacture of hydrate lime and other stone products and to engage in the sale of building materials.

The offices of the company will be located at 313 East State Street and the members of the company are all Rockfordites: L. W. Martin, G. W. Martin, J. E. Myers, J. A. Bowman, Charles Lofgren and John Palm. Over \$30,000 of the stock has been paid in. G. W. Martin, J. A. Bowman and Charles Lofgren were elected directors for three, two and one-year terms respectively.

### Hydrate In Idaho.

Orofino, Idaho, June 17.—R. L. Peatman, secretary and treasurer of the Clearwater Lime Company, has favored us with a copy of a little booklet entitled, "What to do with Lime and what Lime will do for you." It is all about Crystal Rock hydrated lime, and briefly gives a large number of practical formulae for users of hydrated lime. It is a very good idea, and shows that the company is out for business. The motto is as follows:

A man may guff, and a man may lie,  
And a man may puff and blow,  
But a straight business deal,  
Put with gumption and zeal,  
Is the way to make business grow.

### Spraying Orchards With Hydrate.

J. P. Dargitz of Acampo, Cal., a prominent fruit grower in that section of the state, tells of his experience in the use of dry or dust spraying and the new use found for hydrated lime in this method for saving fruit trees from blight which has proved very successful.

He tells that he was first introduced to the lime-sulphur-salt method when he became a fruit grower six years ago. This method had been in vogue many years in that orchard district. It seemed very effective but was extremely disagreeable to handle. It was also quite expensive on account of the usually soft condition of the soil, the heavy weight of water and the wagons necessary to haul over the orchard.

At the State Fruit Growers' Convention held at Hanford, Cal., in 1906, his attention was first called to the idea of dust sprays which he saw at a glance, if effective, would prove a great saving to the fruit growers of California. He inquired and found that this method had been used several years in apple orchards with excellent results. He ordered a machine from the Dust Sprayer Manufacturing Company of Kansas City, Mo., and also some dry materials and prepared for work.

The lime-sulphur-salt spray he said had given good results, but had never entirely controlled the curl leaf on the peaches.

He had an almond orchard of two hundred acres which had never been sprayed, and the peach moth larvae had become so bad in it that the 1906 crop showed forty per cent worm eaten. The red spider also proved quite serious for a year or two before this. They had never had the almond blight in their orchards there before 1906, but had had the peach blight bad enough to make the 1905 crop very poor on some of the trees, and almost a total failure on those trees in 1906. In 1907 the almond blight made its appearance and in four days it had spread over thirty acres and the trees looked as if a fire had gone through the orchard. The peach moth larvae became very hungry in consequence, and as often as a bud showed they ate it up. Having finished dusting his peach orchard, he turned the machine loose on the almond orchard. In two weeks he had a beautiful green foliage on the trees, which continued all summer and set a fine crop of buds for the 1908 crop. He found this method effective and successful in every way.

He said he used hydrated lime, the Vigorite brand of the Holmes Lime Company of San Francisco for a carrier instead of water. It is much lighter and has some other advantages in that it keeps the chemical poisons as a mixture, instead of several solutions forming when water is used. For the same reason, it takes much less material. Every bit of the poison used is available when applied in the dry form, while in the wet form it is largely rendered inert by careless preparation and the consequent formation of several insoluble compounds, which are practically worthless.

This is the mixture he used for the blights, both peach and almond and curl-leaf: Forty pounds of hydrated lime, ten pounds of sulphur and two pounds of the Sal Bordeaux. This he found made a good treatment for two acres and cost about eighty cents per acre, including mixing charge and putting on the orchard. For the peach worm larvae and the codlin moth he added one pound paris green to the above amounts, which raised the expense about twenty-five cents per acre.

### New Use For Hydrate.

One of the large iron moulding foundries has been experimenting and found that by sprinkling the bed of their moulds with hydrated lime before pouring they have had excellent results. This opens up another field for hydrate and the manufacturers should develop this use, as iron moulding is one of the large industries of the country.

### Hydrated Lime More Popular.

Hydrated lime is making friends every day and appears to be losing none of its old ones. Quite a little advertising matter has been going out to the public, to make it more popular, and one Kansas City concern is sending out copies of the following letter, feeling that the words of the user were the best possible kind of advertising:

Gentlemen:

In my work as a contractor I have used hydrated lime for the past seven years, largely in Iowa and Illinois and more recently in Kansas City.

I use this form of lime in brick work and also in plastering, both for brown mortar and for white coat. I have just completed plastering the Boley Building, Twelfth and Walnut Streets, Kansas City, being a job of 15,000 yards, and on this contract all of the lime used was hydrated lime.

This job of plastering does not show one pit or crack in it, and it would have been an utter impossibility to have obtained such results in a job of this magnitude had I used lump lime.

It is my experience that hydrated lime is stronger and goes farther than ordinary lump lime. From an economical standpoint I cannot afford to use lump lime if hydrated lime may be had at a reasonable cost. Further, I buy hydrated lime in packages of convenient size, which permits handling without loss or waste.

I now have contracts for plastering aggregating 23,000 yards and on these it is my purpose to use hydrated lime.

My position regarding the use of hydrated lime is clearly demonstrated in the foregoing statements.

Yours truly,

(Signed) J. W. WHITNEY,  
2209 College, Kansas City, Mo.

### Kosmos Cement.

(Continued from Page 33.)

complete in every detail. A 20 K. W. De Laval turbine connects to a small generator furnishing D. C. current for excitation and when under way this machine is cut out and a motor-generator set used to excite. There are nine main power leads taken from the board and distributions made in each building from metal junction boxes.

Worthington circulating pumps, fire pumps, enclosed heater and all steam and exhaust piping are carried in the basement of the power house, leaving the engine room free from all obstructions. Three Buckley barometric condensers have given perfect satisfaction, an average vacuum of over 27" being held for all seasons of the year. An abundance of cool water is available as a lake averaging 10" to 15" deep and one-quarter mile long, lays between the plant and the river and, being a natural water shed, the water is particularly soft for boiler feed purposes. The pump house at the lake has two Worthington single stage centrifugal pumps; one vertical 2,500 g.p.m. direct connected to 100 h.p. type "CCL" vertical Westinghouse motor and one horizontal 1,800 g.p.m. direct connected to Type "C" Westinghouse; three Roots pumps are also provided in case of an emergency.

Power is supplied by five Wickes vertical water tube boilers, 250-h.p. each, four of which are so arranged as to utilize the waste heat from the kilns. The gases from the kilns pass through a settling chamber and are then admitted to the boilers about half way up in front of baffle wall just over the furnace gases, they then pass through a Green economizer. The draft is regulated by a Foster induced draft fan. Auxiliary stacks, 90' high and 5' 6" in diameter are also provided, one for each two kilns. Reinforced concrete dampers are so arranged that gases either pass through the boiler or to the outside stacks as found desirable. This arrangement has been found satisfactory and quite economical as attested by the total fuel cost per barrel. The steam for the turbines is heated to 150° superheat through a Foster superheater.

The plant partially destroyed by fire last fall has been rebuilt and at present is a model of fireproof construction, concrete, steel and corrugated iron being used. Timber is conspicuous by its absence. The plant originally designed for 1,000 barrels has been brought up to 1,500 barrels and provision was made during the reconstruction to increase to 3,000 barrels this coming spring.

Shipments are for the most part made over the I. C. R. R. but in anticipation of the increased capacity a switch has been surveyed to the L. H. & St. L. road. The river transportation has been rather light up to the present, but plans are under way to utilize this most favorable asset by distribution to the various large cities along the Ohio and lower Mississippi by covered barge.

There is an abundance of raw material, and water and coal is available by both railroad or river. Pittsburg coal is obtained by barge and unloaded in the same manner as the stone, a branch cable road placing it at the coal trestle. West Kentucky coal is used, however, the greater part of the time and has proven quite efficient, a large trestle from the I. C. R. R. bringing it close to coal mill and boiler room.

The raw materials are remarkably pure, the limestone running about 98 per cent carbonate of lime and less than 0.75 per cent magnesia. The clay is very uniform and rather a high silica clay, the silica, however, being in combination and only showing a small percentage free. Being low in  $Al_2O_3$  and  $Fe_2O_3$ , Kosmos cement has given the very best of satisfaction, the set is remarkably uniform and the resulting cement is particularly light in color.

A point worth mentioning is the beautiful accommodation afforded the employees. The village located between the plant and the river is made of concrete houses of tasty design, with ample room for lawns for each home. The village is lighted by electricity and houses are provided with all modern conveniences. The whole village shows the thrift and care of the employees of an organization which has been the subject of much favorable comment.



## FROM OUR OWN CORRESPONDENTS

### PHILADELPHIA, PA.

PHILADELPHIA, PA., June 17.—Although there has not been the same recuperation in the cement business, in this section and in the South, as in the middle West, there is confessedly a considerable betterment of late. More large buildings employing cement have been placed on the boards than for some time, and although somewhat tardy of execution, a hastening of healthier conditions is recognizable by the trade. The general building operation work in small dwellings continues active, and the lime, sand and brick concerns acknowledge that they have all they can do.

The commissioners of Mifflin County have awarded a contract to the Fero Concrete Company, of Harrisburg, for the erection of a bridge over the Kishacoquillas creek, at Lower Manus. The bridge is to be a three-span concrete arch; contract price \$4,080.

Mershon Brothers, real estate operators, will construct an eight-story reinforced concrete building at the northwest corner of Thirteenth and Spring Garden streets, at a cost of \$90,000. Contract has been awarded to Cramp & Co.

George A. Thirsk has the contract for a \$37,000 addition to the factory of the Wallace Wilson Hosiery Company, at the northeast corner of Orchard and Imogene streets.

Richard S. Van Cleave, builder, has begun an operation of sixty-eight two-story houses, at Spring Garden, Fifty-fourth and Fifty-fifth streets, to cost \$81,600. The houses will be 15' 4" x 30'.

A contract for a \$100,000 moving picture theatre at 913 to 917 Market street has been awarded to James G. Doak & Co.

John G. Brown has contract for the construction of a five-story reinforced concrete building for the Hale & Kilburn Manufacturing Company, at Glenwood avenue and Margie street. The building will be "L" shaped, about 195 feet long on one side, 150 feet on the other, and 150 feet deep. It will be of the mushroom system of reinforced concrete, with exterior walls of concrete and brick paneling. The "mushroom system" will be adopted on account of there being no beams or girders, the ceiling being flat and level, will allow the daylight from the windows to travel a far greater distance than in other types of building, and as the building is very wide, this is essential. The building will require nearly 400 tons of steel rods, 10,000 barrels of Portland cement, 7,000 yards of sand, 6,000 tons of stone, 500,000 board feet of lumber for concrete forms, and 1,000,000 brick. Mr. Brown also prepared the plans.

The Continental Title & Trust Company has conveyed to Francis J. Mullen several plots of ground at Twenty-fourth and Tasker streets, upon which 200 dwellings will be erected in the near future.

James A. Mullen recently purchased about 20 acres of ground on the south side of Lansdowns avenue, from Sixty-fifth to Sixty-seventh street, and from Lansdowne to Haverford avenues, for a nominal consideration, subject to mortgages aggregating \$138,000. A large operation of dwellings will be begun immediately.

Ballinger & Perrot, engineers and architects, have prepared plans for an eight-story factory building to be erected on the site running from 1238 to 46 Callowhill street, with 329 to 37 North Thirteenth street and 1237 Carlton street in the rear. The building will cost \$150,000.

The New Chester Water Company, of Chester, Pa., awarded a contract to Thomas Oliver, of that city, for \$265,000 worth of improvements, which will consist of an addition to the pumping station and boiler house and the erection of a dwelling on the reservoir grounds at Harrison's Hill.

A contract for a residence to be built of reinforced concrete at Wayne, Pa., for Walter E. Andrews, has been awarded to James E. Hazzard, builder, of Southampton. Oliver Randolph Parry is the architect.

George Allen, owner of the Hotel Strand, Atlantic City, N. Y., has let a contract for an addition to the hotel to Irwin & Leighton. The addition will double the capacity of the hotel, will be of brick, limestone and terra cotta, steel frame, with concrete floors, and nine stories high, 140x80 feet, and will cost \$250,000. Work will begin on August 1.

The Raystown Water & Water Power Company has just placed in its big concrete dam on the Raystown branch, one of the biggest boulders on record for reinforcement of the concrete. It weighed seven

and a half tons and was carried across the river to the concrete spillway by the big cable that has been installed for such heavy work. This is but one of the "stones" used for reinforcement.

An interesting illustration of the strength of concrete flooring was given on May 28, when an immense iron girder which was being raised to the eleventh floor of the new Wanamaker building, while swinging over the building, slipped the chain and with its tons of weight shot perpendicularly through the open floors to the sixth floor, where it was arrested by the concrete flooring and deflected against the iron uprights. It is doubtful if a flooring of any other material would have stood the test.

The Master Builders' Exchange held its regular monthly social at the exchange rooms on May 29. The attendance was large. Mr. Allan Evans, of Furness, Evans & Co., architects, was the speaker of the day. Miss E. M. Pattison, the accomplished violinist, accompanied by G. A. Ehrenzeller, leader of the Delta orchestra, on a piano, gave the members a musical treat. After the usual luncheon, John S. Stevens, one of the trustees of the Exchange, and known to them all as Uncle John, at the request of the president, Franklin M. Harris, Jr., introduced, with a glowing reference to his record in the building world, his lifelong friend, Allan Evans. Mr. Evans, unapprised that he was expected to address the meeting, confined himself to a plain and very interesting talk on the architects and builders of forty years ago, the work which they conceived and conscientiously accomplished. He mentioned the names of many men now long dead, who became famous through laborious application to their profession, overcoming and surmounting difficulties with which the present age has long ceased to contend. They knew nothing of the facility of copies of specifications, which are now prepared for each and every branch of the work to be carried out. They did not have blue paper; the luxury of a stenographer was undreamed of. The architect made the tracings which were written out and one set must suffice. The talk that better building was done in the olden days, Mr. Evans said, will not stand. A well constructed modern building leaves nothing to be desired. "Of course," Mr. Evans remarked with a twinkle, "the boys must be careful that too much sand is not allowed to slip in when mixing their ingredients." In the olden times an architect had no technical schools nor university training. After graduating from the high school, he worked his way up in an architect's office, and at the mature age of forty years might hope to reach the necessary proficiency for the pursuance of his avocation. Now there is an association, central in New York, where young men are exclusively and effectually trained for the profession.

Concerning the modern builder, Mr. Evans said, to be master of the trade it is necessary that he should have a knowledge of every branch of work connected with the process of building, though not necessarily a practical man he should be master of all details, not depending blindly upon the sub-contractors, etc. Mr. Evans gave some humorous and interesting reminiscences of his old friends in the building trade who are now perched on the topmost rung of the ladder, one of whom is Jacob Myers, of Jacob Myers & Sons. He wound up his talk with the timely advice that every builder and architect take a personal interest not only in the architectural adornment of Philadelphia, which he claimed to be the most beautiful and most American city in the country, and a city of homes, but in her upbuild politically as well. Mr. Allan was followed in the same line, but briefly, by Uncle John Stevens, after which a vote of thanks was extended to Mr. Allan, who had given one of the most interesting talks ever heard in these rooms.

The Engineers' Club of Philadelphia held a special adjourned meeting on May 25 for the purpose of discussing the proposed amendments of the by-laws.

The last business meeting of the season was held on June 5, President W. P. Dallett, in the chair, 125 members and visitors present. The president announced the death of C. T. Wunder, active member since April 6, 1907, which took place on May 28, also called attention to the Engineering Convention to be held in Harrisburg on June 9, 10 and 11.

It was announced that the Board of Directors had elected H. W. Spangler, chairman; E. M. Nichols, William C. Kerr, H. F. Sanville and St. George H. Cooke, to compose the committee on nominations. Following a report of the letters, the president declared that Edgar P. Dunt, Carroll Williams Simon and Charles F. Thacher, Jr., had been elected to junior membership.

The proposed amendments to the by-laws were carried by 140 against 11 votes. A vote for the increase of dues was not carried, the vote being 70 for and 83 votes against the amendment, 102 votes being necessary for approval. The intention of increasing the dues should not be construed to mean, it was asserted, that the club is in financial straits; on the contrary, the finances of the club are in a

healthy condition. The object of the increase of revenue was to better meet the many improvements, entertainments, etc., which have become necessary as the membership grows.

The papers read at this meeting were: "The Industrial Progress of Mexico," by John Birkinbine, active member, and "A Trail Through the Mountains of Oaxaca, Mexico," by Henry E. Birkinbine, junior member.

The Association of American Portland Cement Manufacturers has just issued Bulletin No. 21 of the *Concrete Review*. This number is an exploitation of concrete silos, explaining at length why the silo, which is a tank in which fodder is preserved in a green state for cattle, when the green pasture is not available, is best made of concrete. They do not rot. The slight fermentation in the silage generates acids, which rot out wood and eat away metal silos. They are vermin-proof; built of wood the rats nest in them, air is admitted to the silage through the rat holes; for this reason companies building silos recommend a concrete floor to keep out rats. A silo was built on the stock farm of John W. Boardman, of Michigan, in 1902. It is 16 feet in diameter and 32 feet high. The walls 8 inches thick for the first 16 feet in height, with an offset on the outside of 2 inches at this point, making the thickness of the wall above 6 inches. The reinforcement in the walls consists of barbed fence wire placed every 18 inches. The depth of the foundation is 3 feet 6 inches. The roof is also of concrete. This silo has been in use for six years, keeping the ensilage perfectly. It has never cost one cent for repairs and is as good today as the day it was built. The owner says he will build another of the same type this coming year, of increased capacity. Full directions are given in this book for the building of the silo in all its varieties, and the minutest particulars as to the preparation of the concrete. C. W. Gaylord and Percy H. Wilson are compilers of this work.

J. T. Wakeman, Philadelphia representative of the Edison Portland Cement Company, 613-A Arcade Building, reports a decided improvement in trading of late. The salesmen covering the territory from this office bring good news from all along the line. Mr. Wakeman says that total sales in this office so far for June are about 33 per cent ahead of the same period in May, but prices are still down.

H. M. Fetter, second vice-president of the William G. Hartranft Cement Company, 1110 to 1114 Real Estate Trust Building, states that the company is shipping much more cement than for some time, but unfortunately prices do not advance proportionately.

Philip S. Vollmer, Philadelphia representative of the Atlas Portland Cement Company, 112 Fidelity Building, says prices are still unsatisfactory, but the selling end has shown great improvement of late, consequently he believes a stiffening of values must eventually follow. May trading was good, June from present indications will pass it, and he notes as a most encouraging sign as to outlook, that some of his trade are buying for stock, which has not been the case since 1907.

Among the recent companies chartered are:

The Pittsburg Contracting Company, of Pittsburg, Pa., May 18; Delaware State laws; capital, \$1,000,000.

The Curtis Construction Company, Newark, N. J., May 26; New Jersey State laws; capital, \$25,000.

The Fletcher-Parker Construction Company, Macon, Ga., May 26; Delaware State laws; capital, \$100,000.

The York Construction Company, York, Pa., May 27; Pennsylvania State laws; capital, \$50,000.

The Ern Construction Company, Newark, N. J., May 27; New Jersey State laws; capital, \$25,000.

The General Contracting & Construction Company, Newark, N. J.; New Jersey State laws; capital, \$26,000.

The Atlantic Tiling Company, Jersey City, N. J., June 4; New Jersey State laws; capital, \$100,000.

The Jewell Engineering Company, Paterson, N. J., June 10; New Jersey State laws; capital, \$50,000.

The Elmwood Construction Company, Philadelphia, Pa., June 14; Delaware State laws; capital, \$100,000.

The Walter Construction Company, Philadelphia, Pa., June 14; Delaware State laws; capital, \$10,000.

### BALTIMORE.

BALTIMORE, Md., June 17.—With the continued building activity in and around the city, the local building supply concerns and contractors are optimistic over the conditions. For some reason which has not been given, this section, including Maryland, Delaware, part of Pennsylvania and Virginia, is the battle ground of the cement market. This has caused a flutter in prices and despite the fact that business is good, the dealers do not know what to anticipate in regard to the prices.

Harry P. Boyd, secretary and treasurer of the National Building Supply Company, vice-president

of the Maryland Terra-Cotta Company, and secretary and treasurer of the Lime and Cement Exchange, speaking of the business conditions, now said the bulk of the business is ahead of that of previous years, and is encouraging. "The outlook for the next half year," he said, "is bright as to the amount of business, but profits have been cut, due to the cement companies in this section fighting among themselves. It seems that each firm is trying to undersell the other by putting the price of the product exceptionally low. I have just returned from a trip through the country and find conditions encouraging."

One of the most important building operations going on in the city at the present time is the new addition to the United States postoffice, which is being erected by the Charles McCaul Company, at a cost of about \$185,000. This addition is a granite, steel, terra cotta and concrete fireproof structure, on the east side of the present building. The dimensions are 90 by 103 feet. The foundations and first story have about been completed and the work on the second story walls is under way. Rockland granite is used and the crushed stone is from local quarries. The steel is from the Belmont Iron Works, of Edgemore, Del., and Bragdon Portland cement is being used. The contractors are two months ahead of time on the work and expect to have the building completed October 1 of this year, which will be six months ahead of contract time.

An important contract will be let in a few days by the Maryland Electric Company for the new concrete car barn and waiting station, which will be the Park Terminal of five lines of the United Railways and Electric Company. This building will be the largest of its kind in the city and among the largest in the country. The dimensions will be 191 by 472 feet.

The building will be two stories high and will be constructed of reinforced concrete throughout, with exterior walls of vitrified brick and terra cotta cornice and trimmings. The interior will be arranged for the storage of the cars, each section being fireproof, with rolling steel doors at the front of each section. In addition to the storage barns there will be on the first floor a large waiting room for the public, two large conductors' and motormen's rooms and storage rooms for materials. Plans for the building were made by Baldwin & Pennington, architects, and bids will be received for the construction until June 21.

The steel work of the new seven-story addition to the Hotel Caswell will be finished this month and the contractor, J. Elmer Stanfield, will begin the fireproofing immediately. The steel work was furnished by Dietrich Brothers and the stone will come from local quarries. The addition adjoins the present building at Baltimore and Hanover Streets and the outside walls are yellow pressed brick.

The Engineering-Contracting Company, who has a contract for the new five-story annex to the Hub Clothing Store at Baltimore and Charles Streets, is rushing the work ahead of the contract time. The steel work, which is being furnished by Dietrich Brothers, is nearing completion. The concrete work will be started in a few days. The outside walls will be red brick, with stone trimmings.

Charles J. Bonaparte, former attorney general of the United States, who is a large property owner in this city, which is his home, has awarded a contract to John Cowan to build a five-story brick and stone warehouse at the northeast corner of Paca and German Streets. The foundation will be concrete and the construction will be partly fireproof.

Walter E. Burnham has been awarded the contract for the erection of an additional educational building to the Maryland Agricultural College, at College Park, Md.

The contract for the erection of the State Emergency Hospital at Annapolis has been awarded to D. M. Andrews & Company, who have begun the work of construction.

J. Elmer Stanfield has begun the construction of the two additional stories to the factory of the Lipps-Murbach Company, at Hollins Street and Calverton Road.

The new building of the Builders' Exchange, of this city, was opened a few days ago with elaborate ceremonies. The whole of the interior was decorated for the occasion and several hundred persons inspected the rooms during the day. In the morning addresses were made and visitors were shown over the building, and at noon a luncheon was served to the members and their friends. A dinner was served in the evening, followed by a vaudeville performance. The building is a four-story white brick structure, of a plain but attractive design. It is located on Fayette Street, near Charles, in the center of the business district. The basement is devoted to a large plan room, well lighted. The first floor is the exhibition room of building materials and the

second floor is devoted to a large assembly hall, offices of the exchange, reading rooms and laboratories. The other floors are to be rented as offices and already most of them have been taken.

### CLEVELAND AND VICINITY.

CLEVELAND, OHIO, June 15.—The building situation here continues to keep up well as the season advances. New projects are constantly being announced and many more are contemplated. The building permits show substantial increases over a year ago and everything points to a prosperous year in the construction line.

Cleveland has been deeply engrossed during the past two weeks in its Industrial Exposition of home made products. Over 284 exhibits have been viewed by thousands upon thousands of people who have come from all parts of the country to see them. While Cleveland buildings stand as mute expositions of the builders' art, several concerns in the manufacturing line have placed their product on exhibition. The Newburg Brick & Clay Company has a fine exhibit of brick in built-up columns and arches, while adjoining it is a fine display of hollow brick made by the Ohio Clay Company. The Ohio Ceramic Engineering Company shows a variety of brick and cement handling machinery and has in operation a new type of concrete mixer. The Cleveland Stone Company exhibits sandstone products, showing building blocks, window traceries and grindstones fresh from its quarries. The exposition held during the past month is the largest industrial exposition ever held.

A fine new concrete lighthouse is to be erected at the entrance to the Cleveland harbor. A Cleveland firm, Henahan & King, is the lowest bidder for it at \$39,397. The lighthouse will be of concrete, properly reinforced, and 30 feet high. It will bear a blinking light of the latest improved pattern. There will also be a beacon light on the opposite side of the harbor opening.

Owing to the tremendous success of the Industrial Exposition, a permanent exposition building and music hall for Cleveland is being planned. It must be a structure capable of holding thousands of people. A suggestion has been made that it be of granite and a part of the group plan, but this has not been favorably received, as it is pointed out that the carrying charges on such a building would far exceed its earning capacity. A committee is to busy itself at once with plans for a building which will probably be of heavily reinforced concrete and to cost not more than \$500,000 and as much less as circumstances will permit. It is aimed to have it in a downtown location where it will be easily accessible. Concrete is favored, as such a building would be practically indestructible and the maintenance would be practically nil. F. F. Prentiss, who suggested and who has managed the present successful exposition, has expressed his willingness to head the movement for the permanent building, which will probably be gotten under way within a short time. Architect J. Milton Dyer, who designed the great temporary building with its 70,000 square feet of space, being nearly 400 feet long and 250 feet wide, has been making a preliminary study of the permanent building project with a view to assisting the committee.

Another big building project will be realized within a brief space of time, Architect Dyer having been appointed architect for the new \$325,000 club house for the Cleveland Athletic Club. A valuable site has been purchased on Chestnut avenue and as soon as the detailed plans are completed for contractors to figure on, contracts will be let. The building will be five or six stories high with a frontage of 110 feet and a depth of 132 feet. A unique feature will be the swimming pool and gymnasium, which will be in the upper part of the building.

Workmen have begun improvements to cost \$80,000 at Euclid avenue and East Eighteenth street. Henry Loomis will erect a store and office building on the corner of the latest design, while the Spencerian Business College, in which Mr. Loomis is interested, will be raised three stories. There will be seven stories in the new building, the upper stories being used for office space. Loomis has also leased a fine tract of ground just east of the new twelve-story Pope building and it is rumored that he will shortly erect a new store and office building on that site also.

Wreckers are busy demolishing the old Cross and Rattle homesteads on Euclid avenue opposite East Twelfth street, where ex-Lieut.-Gov. Brown, of Pennsylvania, is planning to erect a big building. Brown wants to build a fifteen-story hotel structure, but if he cannot finance so big a deal will erect a five-story mercantile structure anyway. Steel has been optioned for both these plans. The frame will be of steel, reinforced with concrete.

Contracts for the construction of the first of a series of reinforced concrete bridges to span the tracks of the Nickel Plate railroad in its grade sep-

aration plans have been let to L. W. Mackenzie at \$14,661. It will be at Cornell Road, and a number more are to follow. The bridge will be of graceful form, designed especially for a residential neighborhood.

A business block costing \$100,000 is to be built by William G. Callow and Theodore C. Steuber, of the Kennedy Plumbing Company, who have leased 162 feet of Euclid avenue property near East Eighteenth street. The new building will occupy the west 95 feet and will be 189 feet deep. It will be six stories high. Later the balance of the property will be improved with a mercantile building.

The Eagles' Club on East Fifty-fifth street, just south of Cedar avenue, is to have a \$30,000 addition made to it from designs by Architect George S. King. The building will be two full stories and will have a basement. The ground floor will be used for a lodge room and will be 80x85 feet in size, great steel beams being used to supply the upper floor, which will be used for a ball and banqueting hall. The walls and floors will be of heavily reinforced concrete and brick. The new structure will be in the rear of the club's present quarters and will be completed by fall.

The Catholic diocese of Cleveland is to build a new Catholic church and schoolhouse this summer at Bedford, a suburb of Cleveland. The buildings have been designed by Dercum & Beer, Cleveland architects.

A three-story store building is being erected on West Twenty-fifth street for the John Meckes Company. It will cost \$30,000. The Cleveland Woolen Mills Company is expending \$12,000 on a new fireproof power house.

The new South Side Public Library contract has been let to Andrews Bros., of Cleveland, at \$45,000. Indiana limestone is to be used as the exterior material. It is expected that the building will be ready for occupancy some time next spring. Three other libraries for which Andrew Carnegie has given \$85,000 are to be built within the next year.

Another hotel which Cleveland people are interested in is to be built at Mt. Clemens, Mich. Architects White & Shupe, of Cleveland, have prepared plans for a \$500,000 structure to stand on the site of the present Avery hotel. The new building will be built by the Westinghouse, Church, Kern Company. Max Meisel, of Cleveland, is secretary-treasurer of the company promoting the deal. The hotel is to be ready for use in one year's time. It will cover a plot of ground 350 feet square, five stories high. It will be of steel and concrete.

A new supply firm has entered the Cleveland field as the result of the recent merger of three of the big companies. The concern is known as the Hunt-Queisser Bliss Company, all members having been connected with the Cleveland Hydraulic Press Brick Company up to June 1. William H. Hunt is president of the new company, R. L. Queisser is business manager and C. A. Bliss is secretary-treasurer. It will conduct a general supply business and will look after all the agencies which have been carried by the Hydraulic Company in this city. F. H. Chapin, of St. Louis, has been placed in charge of the Hydraulic Company's office here and is busy reorganizing it.

Members of the Cleveland Builders' Exchange are looking for a merry time at their annual summer outing, which begins June 28 and lasts for five days. The party this year will go to Mona lake, in Michigan, about forty miles from Grand Rapids. The trip from Cleveland Monday night, June 28, will be taken on the big steamer City of Cleveland to Detroit, where a special train will be in waiting at the depot to take them to the Lake Harbor Hotel, where the builders will make their headquarters. The return to Detroit will be made Friday afternoon, the train reaching there about 3 o'clock, thus giving the builders until 10:45 to visit friends there.

### NORTHWESTERN, OHIO.

TOLEDO, O., June 15.—Much has been said in the local press about Toledo leading all the Ohio cities during May in line of building activity, and yet even though in the van, there has been but comparatively little which would interest the dealer in those building products which are dug, mined or quarried from mother earth. For the most part the operations have consisted of repairs or remodel jobs and for the past 20 days the inspection department has not issued permits for to exceed one or two buildings which, when completed, will cost over \$5,000 or \$6,000.

Early June witnessed practically nothing in building, the wet weather being against anything along this line. Architects are not particularly busy just now and the present status of affairs points to a very dull mid-summer period. What work is now under way ought to be finished by that time and with little new work coming out, there will be but small opportunity for contractors to keep busy.

Among the more prominent buildings which are now demanding attention are a school building at Metamora, Ohio, the general contract for which has



just been awarded to J. R. Crepp, of Lyons, Ohio, a high school building at Fremont, the general contract for which was awarded to a Cleveland firm, a state hospital at Lima which is now under construction, a new Methodist hospital in Toledo, an addition to the Pope Motor Car Company, a flat building for James Casey, a mercantile building for Carleton Shaw, a factory addition by the General Electric Company and a few smaller structures include all the new projects which are now out for figures or which will be out within the next few weeks.

In paving circles, there is much more doing than in building. The city of Toledo has considerable work under way and legislation has been started for a great deal more. An interesting fight is developing the repavement of Huron street, a downtown thoroughfare. The Board of Public Service seems inclined to pave it with asphalt blocks, while the property owners are determined to have sheet asphalt used instead, and have filed a vigorous protest against the blocks. Several contracts have been awarded during the past month and a number are up for the coming month. There is also considerable sewer work and contracts are shortly to be awarded for the construction of additional sewers in connection with the new filtration plant.

Joseph P. Degnan, receiver for the Logan Brick Manufacturing Company, has filed his first report in the United States Circuit Court of this city. The report, which is lengthy and full of detail, is pointed in its recommendation of the necessity of an immediate sale of the plant if an immense sacrifice is not desired. He says that much of the personal property of the company consists of brick kilns which rapidly deteriorate if not kept under almost constant fire. He also recommends that the Burroughs Adding Machine Company take back two adding machines which were recently purchased and that the Cincinnati Equipment Company take back a steam shovel which was also purchased recently on a time contract.

The Logan Brick Company for several years past has furnished the bulk of paving brick used in Toledo, the results being uneven, as is generally the case in all pavements. Some of the streets laid have stood up fairly well, while others have gone to pieces, and it is stated that because of the failure of the Logan brick to meet the tests imposed by the Toledo Board of Public Service last year, the recent receivership is largely due. It is also said that shipments of brick to other cities, which proved below standard of quality and their subsequent refusal had much to do toward terminating the existence of the concern, which appears to have been precarious for some time past.

The Maumee Chemical Company, whose offices are in the St. Clair building, whose factory is located in East Toledo and the majority of whose principal officers reside in Port Clinton, reports a very fair business, but not as large as was expected earlier in the year. The company manufactures a water-proofing compound which has enjoyed a large sale wherever introduced. Mr. Gallagher, general manager, is an enthusiastic yachtsman and is enjoying almost weekly cruises on Lake Erie.

The plaster fight shows no signs of letting up, although there is not a plaster manufacturer in this territory but who is awaiting with much eagerness the coming meeting of plaster men which has been called for Chicago on June 26. Reports have just reached the city of New York entering the fight and cutting prices to near cost, while reports from Iowa are to the effect that factories there have laid off their entire selling force. In Ohio the selling price has been reduced in many instances to below cost and there is a different slogan evident than months ago when the rattlesnake skin stuffed with arrows was passed around with the slogan attached "Lay on Maeduff and damned be he who first cries, 'hold, enough!'" The belief is tantamount that a declaration of peace is about to be signed and it will be a happy day for all concerned when it is done.

Dealers in building materials are highly gratified with the working agreement which has been entered into between a number of the electric and steam roads. By the new arrangement through ratings can be secured from shipping points to destination, this eliminating many of the delays and other unpleasant features which arose under the old way of having the goods reconsigned here. This agreement is not yet universal, but the effort is being made to have it become so.

The Woodville White Lime Company has completed several new kilns which were started earlier in the season and are now in position to take care of increased trade along the line of certain specialties which have recently been added to the long list of products of the company.

The marriage of the daughter of Fred Boice, president of the People's Builders' Supply Company, was quite a social event of early June.

A. R. Kuhlman, secretary of the Toledo Builders' Supply Company, is treating his friends to auto rides taken in a brand new machine recently purchased.

Others connected with the building line which have recently purchased new automobiles are Architect George S. Mills, Architect C. A. Langdon, Architect Harry Wachter, Contractor Tom Bentley and Contractor H. J. Spieker. Mr. Spieker is also the first general contractor in Toledo to resort to the motor truck in connection with his business.

M. M. Stopphet, who for several years was employed by Architect George S. Mills, has opened an office and is now located in the Nasby building. His first job of size is the new Methodist hospital building, only a portion of which will be built at the present time.

Edward Thal, also a draughtsman, for several years with Architects Bacon & Huber, has opened an office in the Drummond building and has already done several medium sized jobs.

## PITTSBURG AND VICINITY.

PITTSBURG, PA., June 14.—Business in building supplies in this city and all through Western Pennsylvania is now undoubtedly better than it has been at any other time for almost two years. General business conditions are improving so rapidly that there is little doubt but that they will have assumed normal proportions by the coming fall, if not before. Manufacturing plants all over this end of the state are resuming right along, most of them already being on more than three-fourths of their capacity, while a number of them are operating now to their full capacity. This is placing large amounts of money in circulation, and improving general conditions. Then the local builders have been inspired by the confidence that is being restored and are going ahead with new building projects that were planned two or three years ago, but which were held up two years ago by the financial depression. Building is booming all over this part of the state, and the figures are millions ahead of those of last year.

The cement market is more active than it has been for some months, and some good contract orders are being placed. There is also a steady current business, which has encouraged local building supply houses to materially increase their stocks on hand, all of which have been low for the past eighteen months.

The local correspondent of ROCK PRODUCTS has received an inquiry from Harry R. George, P. O. Box 1493, Pittsburg, for the names of concerns manufacturing machinery for molding reinforced concrete fence posts, and also for the names of concerns in any part of the United States which are commercially engaged in the manufacture of such posts. There is an opening in this part of the country for the sale of such machinery, as well as the posts themselves, and he would be glad to have all the information obtainable on the subject.

The Stanley Construction Company, Conneaut, Ohio, has been awarded the contract for the building of the proposed new line of the Lake Erie & Youngstown Street Railway Company. The estimated cost of the road and equipment is placed at \$3,000,000. There will be considerable concrete work on this contract, including retaining walls, abutments, piers, pedestals, etc.

The Kissner Construction Company, Coshocton, Ohio, has been awarded the contract for the construction of a reinforced concrete bridge that will be built this summer at Massillon, Ohio, for the city. The bridge will have two 60-foot spans, and will be 30 feet in width. Work will be started at once. The bridge will cost about \$12,000.

The T. A. Gillespie Company, Pittsburg, which has been awarded the contract for the construction of the new dock and pier out into Lake Erie at Erie, Pa., is about ready to start actual construction, and will do so before the end of this month. The contract is a large one, and there will be a large amount of concrete used in the foundations, columns, etc. The same company has about completed the construction of the new settling basins on the peninsula at Erie, and will have this work off its hands by the first of July. This was practically an all-concrete contract.

Mayor H. S. Arthur, of McKeesport, Pa., has been notified by the State Department of Health at Harrisburg, Pa., that unless plans are prepared at once for the construction of a sewage disposal plant, the city will be fined. The Health Department issued instructions some time ago to have these plans prepared, as the pollution of the Youghiogheny river must cease, but little or no action was taken toward the preparation of the plans. City Engineer J. Munroe Smith is in Harrisburg at present to receive preliminary instructions concerning the preparation of these plans and specifications, which after completion, must be approved by the State Engineers before contracts can be awarded and work started. The construction of this plant will be a large undertaking, McKeesport being one of the largest cities in the vicinity of Pittsburg. The plant will be constructed entirely of concrete. It must be completed by April, 1910.

W. H. Cochran, Wheeling, W. Va., has been awarded the contract for the concrete foundations, floors, beams and other concrete work on the new plant that is to be built at Moundsville, W. Va., for the Spears & Riddle Company. The building will be 50 by 302 feet, one story in height, and will be largely built of concrete. The entire floor will be of concrete eight inches thick, while specially heavy foundations will be constructed for all machinery, etc.

The Miller Construction Company, Lock Haven, Pa., has been awarded the contract for the construction of about eleven miles of new road for the Pittsburgh, Shawmut & Northern Railroad Company. The contract is a particularly heavy one, and will require at least a year to complete. The work will be in the vicinity of Eldred, Pa., and will be started at once. There will be a large amount of cement used in concrete retaining walls, abutments, wing-walls, etc., as they will be built of this material to the exclusion of stone. This will be but the beginning of a large amount of work that is to be done by the Pittsburgh, Shawmut & Northern, as contracts aggregating sixty-five miles of new work will be awarded, and which will require at least four years to execute.

The D. J. Kennedy Company, Pittsburg, reports excellent business at the main yards and also at all of the branch yards in different sections of this city. They are furnishing the cement for a number of good-sized business structures that are being built in this city this year, and are also doing a good business in wall plaster, etc. The business of this concern, which is one of the largest in this end of the state, is now about normal and up to the standard of what might be termed "good years." It is nearly double that of the same time last year. Stocks are larger now than they have been, and the company is able to keep all teams busy. The lime business is improving rapidly, and some large orders are being received and delivered to large building contractors in this city.

Houston Brothers Company, Thirty-second street and Pennsylvania Railroad, is another busy concern in builders' supplies, and reports received here are to the effect that they are rushed at the present time, with increased business coming in daily. The company's yards are now stocked to about their capacity, with many car loads of materials, including cement, lime, plaster, sand, gravel, etc., coming in daily. The contract business on hand at present is about double what it was at the corresponding time a year ago, and is increasing steadily, while the city trade and current branches of the business are progressing and increasing at about the same rate.

McKallip & Co., 2835 Smallman street, Pittsburg, report being very busy, and have booked some of the largest business that they have had on their books for several years. Their business in cement is particularly good at the present time, and they have closed one of the largest contracts that the concern has ever handled. This calls for furnishing approximately 40,000 barrels of cement to Seanor & Carothers, well known contractors of Greensburg, Pa., for a large contract that was awarded the latter concern about a month ago. This contract amounts to about \$300,000, and calls for the construction of Lake Altoona, a short distance from Altoona, Pa. It will be constructed almost entirely of reinforced concrete, and will be started at once. In addition to this contract, McKallip & Co. have also been awarded a number of smaller contracts for buildings that are being built in this city and vicinity this summer, and are doing an excellent business in sand, gravel, lime, plaster and brick.

Bowman Bros., McKeesport, Pa., have been awarded the contract for the construction of the new 10,000,000 gallon filtration plant that is to be built at McKeesport, Pa., this summer at a cost of about \$200,000, and which will be built largely of concrete. This plant will be built in Penn township for the Pennsylvania Water Company, and will supply filtered water for McKeesport, Wilmerding, Wilkinsburg, Swissvale and other boroughs in that vicinity. It is to be completed by January 1, 1910. Bowman Bros., who are in the builders' and contractors' supply business, as well as in the contracting business, will purchase all supplies direct from the manufacturers.

Daniel G. Fowler, Meadville, Pa., has been awarded the contract for the construction of a new concrete block power house that is to be built at once in that city for Frederick J. Kebort. It will be one story in height. The blocks will all be made by the contractor at Meadville.

The Grier Filter Manufacturing Company, 1207 Hartje Building, Pittsburg, has been awarded the contract for the new filtration plant that is to be built this summer at Punxsutawney, Pa., for the Punxsutawney Water Company, of that city. The plant will cost about \$75,000, and will be built largely of concrete. There will be four filter beds and a large clear water reservoir, all of which will

be of concrete. The Punxsutawney Water Company will also award a contract in a short time for a large reservoir that will be built a short distance from that city, and will be used only for fire protection. It will be lined with concrete.

The Uniontown Builders' Supply Company, of Uniontown, Pa., has been incorporated under the laws of this state with an authorized capital stock issue of \$25,000, and will continue the business conducted under the same name as a partnership. The incorporators of the concern are R. H. Cornish, Edward C. Cornish and Henry W. Morss, all of Uniontown. The business will be conducted along about the same lines as in the past, but will be expanded as rapidly as conditions will warrant. The concern is very busy this spring.

#### BUFFALO N. Y.

BUFFALO, N. Y., June 16.—Buffalo builders report that on account of their present activity they have practically forgotten that the so-called panic ever existed. In fact building operations are very extensive here at present. Contractors are especially delighted that the plumbers' strike which hindered construction work here for a time is now settled. Cement dealers report that the demand for that material is steadily increasing.

The Crescent Concrete Company, capital stock \$25,000, has been organized here. The directors are Eli D. Hofeller, W. Henry Fisher and Eugene L. Falk.

Carrying 10,000 barrels of cement from Alpena, Mich., the steamer McLouth recently arrived here. The unusual cargo was consigned to the Buffalo Builders' Supply Company and unloaded at their warehouse here.

Concrete construction work is being done on the intake pier in the Niagara River opposite the Lockport water line pumping station at North Tonawanda, N. Y. A long crib foundation filled with stone was sunk there last fall. A large pier of concrete extending 15 or 20 feet out of the water is being built at this point.

Cement sidewalks are taking the place of board walks in Dunkirk, N. Y. City Engineer James J. Morrissey, of that city, estimates that since the beginning of the year from 15 to 20 miles of stone, concrete and cement sidewalks have been installed in Dunkirk, making 50 or 60 miles all told.

A recent report from Fredonia, N. Y., said that Contractor E. A. Wilder, of that place, had completed rebuilding the Silver Creek, N. Y., waterworks dam. He is now engaged upon the work of building a concrete bridge to replace the bridge washed away at the same time that the dam gave away.

The board of trustees has voted to lay concrete walks in the following streets in Kenmore, N. Y.: West Kenmore Avenue, north side; Eugene Street, West Hazeltine Avenue, West Tremaine Avenue, Washburn Avenue, West LaSalle Avenue, east side of Delaware Avenue; East LaSalle Avenue, East Tremaine Avenue and Mang Avenue.

Andrew M. Clough, of Batavia, N. Y., has been appointed supervisor of construction on the double-tracking of the West Shore Railroad, from Churchville, N. Y., to Bowmanville, N. Y., and will open headquarters at Oakfield, N. Y., at once. The work will involve the expenditure of \$700,000 and will require two years to complete. Besides the laying of an extra track, it involves the making of a new grade that will take an enormous amount of cutting and filling.

It is expected that the Department of Public Works of Binghamton, N. Y., will replace the asphalt sidewalks in the Court Street bridge in that city with concrete. The latter has been tested on the walks at the east end of the bridge and has proven satisfactory. The brick on the northwest corner of the bridge is in bad shape, due to the vibration of the structure and the large amount of traffic that passed over on one side of the bridge, while the other side was being repaired. It is probable that within a year this pavement will have to be repaired.

B. F. Aldrich, of Dunkirk, N. Y., has the contract to build the new boiler shops of the Brooks plant of the American Locomotive Company in that city. The contract includes all work excepting excavation and the building of the concrete foundation, which is now being done by the company. The new shop is to be over 600 feet long and nearly 200 feet wide. It will be of iron, brick, stone and concrete and will be wholly fireproof. Its cost is estimated at more than \$250,000.

Not long ago about 300 employees of the Orleans County, N. Y., Quarry Company were thrown out of employment by the discontinuation of operations in the brown sandstone quarries at Albion, N. Y.

A Buffalo newspaper has been giving much satisfactory publicity to the fact that the enormous concrete anchors of the Manhattan Suspension Bridge, which will connect New York and Brooklyn, at a cost of \$12,000,000, were built largely with Edison Port-

land Cement sold by the Lyth Tile Company, Ellicott Square, Buffalo, N. Y.

The Continental Artificial Stone and Manufacturing Company, with headquarters at Lexington, Ky., of which A. Traliot is president and general manager, and A. K. Haynes secretary, is operating in Buffalo.

The B. I. Crooker Company was the lowest bidder on the entire work of building the new pumping station at the foot of Porter Avenue, Buffalo. This bid was \$383,291.

Miles Ayrault, president of the National Roofing Company, is dead at his home in Tonawanda, N. Y.

Peter Meister, of Dunkirk, N. Y., has the masonry contract for a new school being built at Fredonia, N. Y.

Frederick C. Slee will build a residence in Buffalo; Green & Wicks, architects; Warner & Warner, builders.

A masonic temple designed by Architect Robert North, of Buffalo, is being completed at Batavia, N. Y., at a cost of \$41,000.

At Dunkirk, N. Y., the directors of the Merchants' National Bank have engaged Esenwein & Johnson, architects, of Buffalo, to prepare plans for the building of a third story on the bank's brick block.

Charles Shean, of Springfield, Mass., one of the proprietors of the Cooley House in that city, has been in Buffalo consulting Esenwein & Johnson, architects, with reference to plans for a new hotel for Springfield to cost \$1,000,000.

A supervisors' committee has voted to report in favor of awarding to John Lannon, at his low bid of \$36,770, the job of making certain alterations at the penitentiary in Buffalo.

Louis H. Gipp, of Buffalo, was awarded the contract for the construction of the Vandervoort Street paving in North Tonawanda, N. Y., at his bid of \$24,516.50.

The State Canal Board at Albany, N. Y., has approved the barge canal contract No. 53 covering the construction of a lock at Phoenix on the Oswego Canal, at an estimated cost of \$200,000.

The New York Central will build a new freight house in Buffalo at a cost of \$100,000.

At Niagara Falls, Ont., the commissioners of Queen Victoria Park have decided to build a \$50,000 sea wall at Cozy Dell, which is on the line of the boulevard, now building, and almost directly across from Buffalo.

The Central Construction Company, of Cleveland, has an extensive contract to deepen Buffalo River.

The Canadian Board of Railway Commissioners has decided that the Canadian Pacific and Grand Trunk must build a four-track viaduct across the waterfront at Toronto, Ont., within two years. The city of Toronto also is ordered to pay one-third of the cost of building the viaduct. The city engineer estimates the cost of the viaduct at \$2,000,000.

#### SYRACUSE AND VICINITY.

SYRACUSE, N. Y., June 18.—Cornelius J. Sullivan, of Syracuse, N. Y., agent for the Giant Portland Cement Company, of Philadelphia, Pa., has been awarded a contract for furnishing 7,000 barrels of cement for the new Onondaga Hotel at Syracuse at \$8,000. The Stewart Company awarded the contract.

The Central City Paving Company has been awarded a contract by County Purchasing Agent Frank X. Wood for the laying of 364 square yards of Johnsbury vitrified brick pavement at the New York State Armory in Syracuse at a cost of \$2.25 per square yard.

P. R. Quinlan, of the Warner-Quinlan Asphalt Company, has just returned from a business trip to Venezuela. He spent the greater part of six weeks at Trinidad. He said that Cipriano Castro had not only injured the best interests of Venezuela so far as its mining and other interests were concerned but had brought upon the country the displeasure of practically every other country. Mr. Quinlan said: "President Gomez has promised to do things. He wants progress and he declares he will change the mining laws so as to stimulate interest in this direction and will protect and encourage the placing of outside capital. He also wants immigration. It is truly a rich country and all it lacks is stability of government to give encouragement to investors. Of course, things have been going so badly that it will take a little time to right matters. Gomez cannot expect investors to come there until they are certain of the future." Mr. Quinlan said the signs of progress in Caracas were limited as compared with his last visit there six years ago. "Of course," he continued, "I noticed that some of the people were slightly better dressed and that a little something had been done in the way of pavements." Mr. Quinlan said that in Trinidad he completed a deal whereby the Warner-Quinlan Asphalt Company will obtain its future supply of asphalt. The raw material is obtained from huge beds which are located on lands leased by the Syracuse man.

## CHICAGO

CHICAGO, June 18.—A much better feeling exists among the men in the cement trade than has prevailed for some months. Business has been dull this spring and demand poor, owing to various causes which were, however, temporary. Prices had a decided slump last April which reached the lowest level known for some time in Chicago. This month the demand has been somewhat better than last month and prices are picking up.

The reason for this better feeling existing now, is that indications all point to an increase in building operations over last year, variously estimated at from 33 to 50 per cent. The letting of contracts by the city for paving, which were held back on account of the street car companies laying tracks and which are now nearly finished, allowing the paving of streets to commence. The railroads which have so far this year been buying from hand to mouth are commencing to buy in larger quantities.

All of these conditions will produce a greater demand, a greater activity, and it is felt that the consumption of cement will be much greater than last year. Prices also are showing an upward tendency and a general feeling of cheerfulness is taking the place of doubt and depression of early spring. Everybody is looking to the fall, full of promise for better things and everybody feels that the outlook is bright and that the volume of business by the end of this year will be decidedly satisfactory and decidedly greater than that of 1908.

Among the men dealing in sand and gravel few complaints have been heard. They have had a good demand for their products and would have been satisfied with the business they have done had prices been better, which now, however, are showing an upward tendency.

The Wisconsin Lime and Cement Company has found business to be about the same this month as it was in May. The demand for cement has been slow so far this year and prices very low. Prospects, however, are bright, there is an upward tendency in prices and the consumption of cement it is believed will be decidedly greater than that of last year.

C. B. Sheffer, president of the Garden City Sand Company, said that up to the present time this year there had been a dullness in the cement trade which had shown but little improvement if any this month. Prices are lower than they had been for a long period and the demand was exceedingly light, due to various causes.

Among these causes was the buying from hand to mouth by the railroads, which use a large per cent of cement consumed; the delay of commencing building this spring on account of weather conditions and the delay in paving streets, the city waiting for the surface roads to finish laying tracks in order to lay pavements without interruption. All these conditions are things of the past. The indications are that building operations this year will exceed those of last year from 33 to 50 per cent and that it was the general belief that a much larger quantity of cement would be consumed than last year. The situation is a hopeful one and good business can confidently be looked for from now on.

Business has been dull so far this year and little improvement has been felt this month, but prospects are bright in the cement trade, was the way conditions were sized up by George W. DeSmet, distributor of Vulcanite Portland cement. He further commented on the conditions locally which he said could not help but bring about a larger consumption of cement here than last year and also bring about a stiffening of prices which was much desired by every man in the trade.

On the whole, business is better than last year and June has shown some improvement over last month, while prospects are bright for much better things, said E. A. Mollar the Chicago representative for the Sandusky Portland Cement Company. Their mills, he continued, at Dixon, Ill., and Sandusky, Ohio, were nicely fixed with orders and while their mill at Syracuse, Ind., was not so well situated in this regard, its output would be used for the Chicago market.

Prices undoubtedly have reached their lowest ebb and are lower than they have been for some time but are commencing to stiffen up. The demand for cement is increasing and everything points to a much busier year than experienced by the trade the year before. Various local conditions this spring including bad weather have so far made business slow, but all that is past and the year's business will prove to be one of the most satisfactory which could be hoped for.

J. S. Putney, secretary of the Lake Shore Sand



Company, said that business was very good and in fact had more than they could attend to. Their volume of business was greater than last year and was better than in the month of May. The only thing that they would like to see is better prices. Prices are low but are stiffening up and that prospects are bright both for increased demand and increased prices.

He said they had been preparing for this increased demand by building the largest plant in the United States at Algonquin, Ill., which will be ready to operate July 4. Its capacity will be 2,000 yards of sand and gravel a day. They own a tract of land of 184 acres which they estimate holds a deposit of 10,000,000 yards of sand and gravel.

At the Richardson Sand Company it was stated that they were doing a fair business but everything considered business so far this year had been dull and that prices were low. Business for the month of June had shown but very little improvement over May and that they were now facing the two dull months of the year, July and August. The outlook, however, was bright for the future. The demand for sand and gravel promises to be very good and with it an advance in prices. The situation in the trade was decidedly encouraging and that this year would prove to be an exceedingly busy one in Chicago.

E. L. Cox, secretary of the German-American Portland Cement Company, reported that business this year was good and that the prospects for increased demand and better prices were good.

Gold Williams, of the Marquette Cement Manufacturing Company, said that business was fair, perhaps a little better than last year and that the business for June was showing a little improvement over that of last month. Prices were low and that the demand so far this year had not been what had been expected. The outlook, however, was bright and full of encouraging elements. They have a number of large contracts to fill this year. Among them the furnishing of cement used in the building of the Peoples Gas, Light and Coke Company, and the \$20,000,000 depot of the Chicago & North-Western Railroad Company.

Mr. Frazier, of the Chicago Portland Cement Company, was in a very hopeful mood.

"As you well know," said Mr. Frazier, "the past few months have been miserable for the cement manufacturer. During the last month, however, conditions in the cement market have looked decidedly brighter. True, the price has not improved materially but what is better, the men in the country are beginning to send in good-sized orders and plenty of them. Consequently, if the demand continues to improve, prices are bound to become much more favorable. I firmly believe that, all things being equal, both the demand and the price of all kinds of cement will be excellent. I think that there is small doubt but that the manufacturer will have a most prosperous summer, at least it will more than come up to expectations. Then by fall the market will be on a firm basis enabling the manufacturer to hold up the price."

Mr. Frazier continued in this vein and seemed to be really delighted at the turn conditions have taken.

According to J. P. Beck, of the Universal Portland Cement Company, the demand for Portland cement is increasing steadily and is climbing surely to the normal state. "But," said Mr. Beck, "the price has been such that the manufacturer has been practically forced to give his goods away. Consequently, on several large jobs that we were asked to quote on, we deliberately raised our price, not being able to take care of the business at such a price. While I think that the demand will continue to improve throughout the summer, I do not look for a normal demand nor a satisfactory price until fall. We are continuing to plug along steadily, however, and hope that the normal condition, which we expect to make its appearance in the fall will not disappoint us."

Mr. Moats, of the Austin Manufacturing Company is more than pleased with existing conditions. According to Mr. Moats, orders are coming in at more than a satisfactory rate and while prices are not exactly normal, the demand is such that the crusher manufacturers must have a great plenty of orders on hand. "We have been working overtime the last month or so, in an effort to fill our orders," said Mr. Moats, "and have booked some very satisfactory ones among which might be mentioned four complete No. 6 crushing plants ordered by the State Highway Commission for the State of Washington to be located at Seattle, Spokane, North Yakima, and Vancouver, respectively; the order for two No. 5 crushing plants from the Star Sand Company, Portland, Ore., one for one No. 7½ and one No. 5 crusher to be erected at Osborn, O., for the Springfield Coal and Ice Company; an order received on the twentieth of May for a complete No. 7½ plant for the Ohio Marble Company at Piqua, Ohio. We might also mention the No. 5 plant for the Fort Smith Vitrified Brick Company, Fort Smith, Ark.; the No. 5 plant complete for the J. A. McLoy Granite and Quarry Company; the foreign order of a No. 6 plant for N. J. Roberts, director

of public works, Pernambuco, Brazil; a No. 4 plant for the Traylor Engineering Company, Red Lodge, Mont.; a No. 5 plant for the city of Salem, Va., and I could go on and give you plenty of more unfilled orders for crushing machinery. No, we can't complain on the number of orders; now if prices would only improve which they undoubtedly will if we do not grow impatient, the season will develop into a most satisfactory one."

M. J. Williams, of the Williams Patent Crusher Company, was very busy getting ready for a two days' outing at the automobile races when the Rock Products scribe called but he took time to say that business was very satisfactory; that orders for crushing machinery were coming in very regularly of late and conditions are gradually assuming their normal state.

## KANSAS CITY DISTRICT.

KANSAS CITY, Mo., June 15.—Building operations have continued to be good up to this month, but it is possible not so good a showing will be made in June, for the reason that the strike of the hod carriers is likely to hold back work to a considerable extent. The hod carriers made a demand January 1 "that their wages be increased on April 1" from 35c to 40c per hour. The contractors refused to accede to the demand and nothing further was done until the second week of June, when the hod carriers were called out on strike without any warning. The Master Builders' Association held a meeting, and decided to refuse to accede to the demand of the hod carriers. A few contractors, however, signed for the new scale with the understanding with the balance of the contractors that they would refuse to pay 40c after the completion of the buildings which they are now working on and which are almost completed. Other contractors are already arranging for non-union men and expect to go ahead with them, while still others are waiting a settlement of some kind. Ford Allen, president of the state board of arbitration and mediation, has called a meeting of the board, and will try and help towards a settlement. The Hod Carriers' Union membership is mostly negroes.

John V. Roundtree has brought a personal injury suit against the Kansas City Portland Cement Company for \$5,000 damages. He says that he was formerly manager and operator of a mill at the company's plant and was injured April 26, 1908.

The Miracle Cement Block and Brick Company has been incorporated in Muskogee, Okla., with a capital stock of \$2,000 by W. H. Shepherd, Byron Bronson, W. H. Pritchett, Charles T. Trew, S. M. Hilligoss and others, all of Muskogee.

The Y. M. C. A. has sold its building and site in St. Joseph, Mo., to the German-American National Bank, and steps will at once be taken by that company for the erection of a million dollar office building. The Y. M. C. A. immediately purchased a site for a building at Tenth and Farson Streets, for \$15,000, and will erect a building thereon to cost \$250,000.

The Leslie-O'Rear building will make use of the United States Gypsum Company's plaster, the contract for same having already been placed through the C. A. Brockett Lime and Cement Company.

The Union Sand and Material Company is doing something in the way of an export business to Mexico.

Preparations are being made by Herman Sydow and Carl Eider for the erection of a two-story reinforced concrete building in Globe, Ariz.

Silver City, N. M., is about to erect a courthouse which is to cost \$40,000.

The Lee Huckins Hotel and Office Building Company, of Oklahoma City, Okla., is reported to have changed its plans to a considerable extent, having abandoned the office feature of the proposed 10-story building and enlarged the hotel proposition to occupy the entire 443 rooms.

The Beatrice Cold Storage Company, of Beatrice, Neb., is about to erect a brick and concrete \$10,000 addition.

McGuire & Stanton have secured the contract for repaving Cherokee Street, in Leavenworth, Kan., with brick, at 97 cents per square yard. The same firm has the contract for curbing and a 1-2-4 mixture to be used for the latter.

W. R. Stewart, a contractor of Little Rock, Ark., has the contract to erect an addition to the Hotel Marion in that city, and St. Louis gray brick will be used.

Dr. H. E. Silverstone is about to erect a hotel building on the southeast corner of Twelfth and Troost, in this city.

The site is now being cleared for a fine building for the Kansas City Star, occupying the block at Eighteenth and Grand. When the new union depot is built this will be an ideal site for a newspaper office.

The Laclede Manufacturing Company, of this city, proposes the establishment of a large furniture factory in Independence, Mo.

The Kansas City Athenaeum is planning the erection of a club house to cost in the neighborhood of \$50,000. Mrs. Wilbur Bell is treasurer of the society.

The Flanagan Bros. Manufacturing Company has received the contract for the erection of a combination store and flat building for Anna Freeberg. Brick and stone will be used and a gravel roof.

E. A. Madorie has been awarded the contract for building an addition to the Garfield school, to cost \$24,250. Brick will be the principal building material.

F. H. Thwing has let the contract to the Flanagan Bros. Manufacturing Company for the erection of a brick hotel building.

Wm. H. Martin has let the contract to C. E. Shepard for the construction of a stucco residence to cost about \$6,000.

J. Sidney Smith proposes to erect a residence at the junction of Glead Terrace and Holmes Street, of stucco construction, and to cost about \$20,000.

The city is going to establish its own paving repair plant, and it is expected that the full outfit, paving equipment, plant and all, will cost about \$25,000.

Warren D. House is about to begin the erection of a brick business block at 1430 Main Street. It will be of brick construction, three stories high, and marble steps will be used.

Douglas & Co., of Cedar Rapids, Ia., have purchased nine acres of land in the Blue Valley manufacturing district of this city, and will put up a large starch factory here, at a cost of \$175,000. H. H. Goff, of Cedar Rapids, is the general superintendent. The main building will be 201'x101' and four stories high, and the secondary building will be 165'x74', four and two stories, and the power house 70'x92'.

C. C. Carter, of Excelsior Springs, Mo., is soon to begin the erection of an apartment building in this city, to have three stories and finished basement, and to cost about \$20,000.

J. H. Felt & Co., of this city, are preparing plans for a school building to be erected in Liberty, Mo., to be two stories and basement, 65'x100 feet, and made of vitrified brick and stone. The same company has plans which will be ready for bids in a few days for a county hospital building to be erected for Saline County, near Marshall, Mo. It will be constructed of brick and will cost about \$35,000.

The Jackson-Walker Cement Block Company is about to begin the erection of a factory building in Wichita, Kan.

A 10-story steel and concrete building is to be erected in Wichita, Kan., for the occupancy of the Wichita Beacon.

The Riverside Club, of Wichita, Kan., has decided upon the erection of a \$15,000 stucco club house.

Williams & Wells have the contract for plans for the 14-story office building to be erected at Robinson Street and Grand Avenue, in Oklahoma City, Okla., by C. F. Colcord. It is to cost about half a million dollars.

Max Hershowitz has let the contract for drawings for his 10-story department store and office building to be erected in Oklahoma City, Okla., which is to be made of reinforced concrete and to cost about \$300,000. The building will be 100'x140', and will face on Broadway.

The Odd Fellows are about to begin the construction of a brick and stone building in Hutchinson, Kan., to cost about \$20,000.

Bids will soon be asked for the placing of a new tile roof on the county jail in this city.

The Young Women's Christian Association has been waging an active campaign to raise \$300,000 for a building in this city. The attempt to raise this amount in a certain number of days failed, by about 10 per cent, but it is stated that a building to cost about that amount is to be built in the near future, and will probably be five stories high.

The Missouri Shale Brick Company has been incorporated in this city, and the capital of \$175,000 is half paid up. The following incorporators are named: F. C. Kaempff, O. L. Kaempff and Jos. S. Waller.

F. E. Parker & Son, architects of this city, have plans under way for a \$40,000 reinforced concrete office building for the Wichita Union Stock Yards Company, of Wichita, Kan.

Plans have been ordered for a brick building to replace the present frame building used by the Bancroft school.

The Corby Building Company has been incorporated in this city, to do a contracting business, with a capital stock of \$360,000, by Joseph A., John and Joseph E. Corby.

Dr. C. L. Reeder is about to begin the erection of a 5-story concrete office building in Tulsa, Okla., to cost about \$40,000.

Flynn & Ames have awarded the contract for the construction of their 7-story reinforced concrete building to be erected in Muskogee, Okla., to the Oklahoma City Construction Company, of Oklahoma City, Okla.

Burk & Cowen, of Fort Smith, Ark., have been awarded the contract for the construction of the Graham-Sykes building in Muskogee, Okla., which will cost about \$75,000.

F. G. Altman, of the Altman Realty Company, has the plans for a 6-story hotel on the corner of Fifteenth and Locusts Street, to be exclusively for men, and he is also going to build another hotel adjoining which will cost \$30,000.

N. W. Dibble is about to begin the construction of twenty-eight dwellings on Harrison, between Twenty-seventh and Twenty-eighth Streets, to be one and two stories high, and stone veneered.

J. O. Lea has been awarded the contract to build a four-apartment flat for W. C. Miller.

The Security Trust Company, of Phoenix, Ariz., has let the contract for a 4-story reinforced concrete building to be erected in that city. The general contract was let to the F. O. Engstrom Company.

Wandell & Lowe have ordered plans for a 7-story and basement reinforced concrete warehouse with mezzanine floors, to be erected in Denver, Colo.

The death is reported of W. B. Block, a former contractor of Marshall, Mo., who has been living in this city for several years.

Wm. R. Berryhill, of Kansas City, has the contract for plastering the new 8-story National Bank Building in Fort Smith, Ark., and will make use of the United States Gypsum Company's plaster and Universal finish.

Cement manufacturers of this city are reporting a steady demand for their product, and also a steady price. There has not been much in the way of big contracts closed in the past month, but the demand is for a car or two to a place, and comes from so many places that the production seems to be pretty well taken care of.

The Southwestern States Portland Cement Company has given out information to the effect that its plant in West Dallas, Tex., is to begin operations about June 15, and will make about 3,000 barrels of cement per day.

A \$1,000,000 cement plant is planned for Springer, Okla. The incorporators are E. S. Ayers, of Edgerton, Kan.; W. W. Fry, of Olathe, Kan.; J. L. Middleton and C. R. Goodale, of Collinsville, Okla., and Philip Lawrence, of Huron, S. D.

The Security Storage and Warehouse Company has purchased a site at 1409 St. Louis Avenue, 72'x120', and will erect thereon a 5-story reinforced concrete storage building to cost about \$75,000.

Locally the lime trade is holding up better than a year ago, in fact there is a better sale for everything in the building line. There has been a better supply of brick of late, the price having gone up to \$8.50 delivered on the job, and at that figure brick came in from wide enough a territory to quickly make up the shortage, so the dealers have the matter well in hand now. Contracts are said to be let on very close figures, and contractors are not generally making as much money as they should on the amount of work they are turning out.

### THE TWIN CITIES.

MINNEAPOLIS, MINN., June 14.—The building season has gotten under way in full force and there is a large volume of building in every direction, both in the cities and in the country. The season is exceptionally good with nearly everything. There are a great many large structures under way, and of exceptional material as to cost and appearance. Some of the structures being erected at interior points, though they are not striking as to size, are noteworthy as to their architectural and structural elegance.

The cement season in the Northwest promises well, and all local houses expect to go beyond previous records. Some of them are advised from headquarters that they expect the Northwest to do more than its share in order to make the totals hold up.

The demand for enameled and pressed brick and terra cotta work for building use is quite good. There are quite a number of structures in view or under way, which call for some or all of these.

The labor problem has been free from annoyance, to a great extent this spring, and that has helped a great deal. Union men are working with non-union men and are raising no questions and all are satisfied. There are some hints of an attempt at reunioining in some quarters where the open shop has been established, but whether it will prove successful remains to be seen. Duluth is a conspicuous point in this respect. The open shop has been completely established and the workmen are getting as good wages as ever, but there is none of the petty bickering which was inevitable under the closed shop, and none of the trivial strikes which were so frequent.

William H. Norris, manager of the Minneapolis

house of the Keasbey & Mattison Company, recently went to Seattle, Wash., where he took charge of a new distributing office for the same company. J. H. Brown, Jr., who was for several years in the local office before going to Omaha, with the company, returns to Minneapolis to succeed him.

The Chaska Brick and Tile Company has been incorporated in St. Paul by J. W. L. Corning and Mary E. Corning, both of St. Paul, and Frederick Greiner, of Chaska, being of the firm of Greiner & Corning. The capital stock is \$50,000.

A building code revision commission of St. Paul has about completed the first draft of the proposed code. The new code will devote considerable attention to reinforced concrete construction, which the old code hardly considered. Restrictions are also enforced upon the construction of automobile garages. Moving picture establishments which have recently sprung up also come in for more regulation than heretofore, and there is quite a general application of requirements as to fire escapes, stairways, entrances and exits for office buildings, public buildings, halls, theaters, schools and the like.

J. George Cunningham has become building inspector of St. Paul, succeeding Watson Townsend, who resigned to take a position in Omaha with the Union Pacific Railway.

R. A. Elzy & Son, railroad contractors, Marshalltown, Iowa, have opened a branch office in St. Paul in the Gillfillan block.

C. A. P. Turner, the Minneapolis engineer and designer of the Turner mushroom system, has received Canadian patents on reinforced concrete construction. The patents are very broad and cover twenty-three different types of reinforcement.

Francis M. Henry, a Minneapolis engineer, is erecting a sand and crushed gravel washing plant at Cedar Lake, on the edge of the Minneapolis city limits, which will produce a superior grade of clean, sharp sand and gravel for reinforced concrete work. The bank of sand includes about 160 acres, of granite, trap and quartz. It will be screened into six sizes, such as brick sand, concrete sand, torpedo sand, roofing gravel, reinforced concrete gravel and concrete gravel.

Nelson Bros. Paving & Construction Company, of Minneapolis, has changed the power system at the plant from engines to electric motors throughout.

Building permits in St. Paul for May run ahead of a year ago, and for five months of the year they aggregate \$3,845,132. June is expected to run over \$2,000,000. Minneapolis shows \$1,550,460 in totals for May, against \$1,507,000 for a year ago.

A new nine-story building, 132x167 feet in size, will be erected at Second avenue, North and Third street, Minneapolis, for Tibbs, Hutchings & Co., St. Paul, wholesale dry goods. The building will be of reinforced concrete construction, with brick exterior walls, and will cost \$300,000. It is to be ready for occupancy about November 1. Long, Lamoreaux & Long, of Minneapolis, are the architects.

B. P. O. E. Lodge No. 44, of Minneapolis, is having plans prepared by Kees & Colburn, architects, Minneapolis, for a club house and lodge building to be erected at Seventh street and Second avenue South, of pressed brick and terra cotta, 70x160 feet in size. Cost about \$100,000.

Clarence H. Johnston, architect, St. Paul, is preparing plans for the new engineering building for the State University, at Minneapolis, which will cost \$200,000.

The George J. Grant Construction Company, of St. Paul, has work under way for the new reinforced concrete grand stand at the Minnesota State Fair grounds, between Minneapolis and St. Paul. The job will take 9,000 barrels of Portland cement, the Marquette brand being used. The Kahn system of reinforcement will be used.

The George J. Grant Construction Company, of St. Paul, received the contract for a main building at the packing plant of the J. T. McMillan Company in St. Paul, to be 120x120 feet, five stories, Turner reinforced concrete, mushroom system. Owl Portland cement will be used. Cost \$80,000.

C. E. Bell, Tyrie & Chapman, Minneapolis architects, have prepared plans for an institutional church for the Fifth Presbyterian congregation of Minneapolis. It will be three-story and basement, 78x120 feet in size, with stores below, offices above, and church rooms on the upper floor. Cost \$25,000.

H. F. Simonson, of Minneapolis, will erect a four-story pressed brick family hotel building at Tenth street and Portland avenue, on plans by Jager & Straus, architects, Minneapolis. Cost \$60,000.

The George J. Grant Construction Company, of St. Paul, received the contract for rebuilding the two structures at two corners of Seventh and Cedar streets, St. Paul, where the fire of last January wiped out \$600,000 worth of property. The Boston & Northwest Realty Company is rebuilding two buildings, each about three stories high, 60x90 feet in size. The Kahn system of reinforced concrete will be used. Cost \$125,000. Mark Fitzpatrick, architect, St. Paul.

Bids are being taken for the construction of the new Mechanics Arts high school of St. Paul, to cost about \$375,000. Rankin, Kellogg, & Crane, architects, Philadelphia.

Marshall & Fox, Chicago architects, are preparing plans for a Schubert theater to be erected in St. Paul at Wabasha and Exchange streets to cost about \$150,000. The same architects will prepare plans for a similar building for Minneapolis.

Finch, Van Slyck & McConville, St. Paul wholesale dry goods, have bought a site at Fifth and Wacouta streets on which to erect a new wholesale building, ten stories, reinforced concrete construction. Their present lease runs three years yet, and construction will not be begun until near its expiration.

The city of St. Paul will erect a new city jail, Reed & Stem, architects, St. Paul, having plans in preparation for a brick and cut stone building, to cost about \$150,000.

The Twin City Rapid Transit Company has started work at its general shops at Snelling and University avenues, St. Paul, for a new cement, brick and cement block warehouse, 100x212 feet, to cost \$75,000.

William M. Kenyon, Minneapolis architect, has submitted plans to the board of regents for the Elliot memorial hospital to be erected at the state university in Minneapolis. Cost \$100,000. It will be fireproof.

### THE WEST COAST.

SAN FRANCISCO, June 8.—With the advance of the summer season, the cement market shows a steady improvement, and the volume of business done by all the local manufacturers and dealers during the past month has been very large. In fact, this year is likely to be a record-breaker on the Pacific Coast in the amount of cement used. The manufacturers here feel assured that the demand for domestic cement, at least, will be larger than ever before, not excepting the year following the fire. This is not due to any increase of building operations in and around San Francisco, though this continues to take large quantities, but more to the increase of development work of various kinds, both here and in other parts of this and neighboring States, in which concrete is becoming a more and more important factor. Shipments of cement from this city to Portland and Puget Sound were extremely heavy during May, a large tonnage being dispatched every week, and this movement is likely to be continued throughout the summer. Deliveries on local contracts, for private as well as Government, State and municipal work, have also been larger than the month before, while a number of additional contracts will be let this month.

The local building situation is hardly up to expectations, the valuation of permits for May being \$2,680,545, in comparison with \$2,827,054 for April. A good many concrete buildings are being put up, however, and the amount of material required for this purpose is about equal to that used for several months past. While there is some delay in carrying out the larger building projects which were planned earlier in the season, the local architects are keeping busy, and more work of a private nature is expected during the later summer and fall than is coming up at the present time.

Some foreign cement is arriving at the northern ports, but there is very little in this market, and what there is is selling about on a parity with the local article. The prices on local brands are still quite firm, the usual quotation being \$1.95. While the maximum capacity of the Pacific Coast manufacturers is now greater than the average trade requirements, on account of the extensive additions to equipment during the last year, there is scarcely any surplus on hand at the moment, and the market is likely to be well cleaned up for the rest of the year. Some concerns already have contracts which will cover a large proportion of their output for some time to come. A number of large cement manufacturing projects now being promoted in the Northwest may within a year or two partially shut off the outlet in that direction, but for the present conditions are eminently satisfactory.

The Cowell Portland Cement Company is finding a ready market for the product of its new Mount Diablo factory, and will doubtless find a larger demand as the material becomes better known. At present the company is in a position to fill all orders promptly, as the plant is in full operation. The quality of the Mount Diablo cement is holding up in fine style, and in the tests made of it has been equal in every way to any foreign brand on the market.

The Pacific Portland Cement Company has commenced work on a railroad which will be built from its plant to Suisun, Cal. This will give the company an outlet on navigable water on the San Francisco Bay, enabling it to reach the markets at the Bay and river cities with much less expense than at present.

A company is being organized at Bakersfield, Cal., by W. H. Murray, P. J. O'Brien, C. G. Law and C.



W. Ball, for the manufacture of concrete stubs for telephone and other poles. The stubs, patented by Mr. Murray, have been successfully tried by a Bakersfield light company, and many of them are now being installed. The stub is made to project a few inches from the ground, with clamps to hold a wooden pole above. Owing to the high cost of wooden poles in the interior of this State, a large market is expected for the concrete stub.

The Harbor Commissioners have completed plans for two concrete office buildings north of the ferry building. Another concrete building is soon to be constructed south of the ferry building as soon as work is completed on the new bulkheads. A contract for an additional section of concrete bulkhead is to be awarded in a few days.

The Western Rock Products Company has been incorporated in San Francisco, with a capital stock of \$25,000, by R. C. Staats, A. E. Black, and G. L. Hughes.

The San Juan Portland Cement Company has levied an assessment of \$1.50 per share on its capital stock.

The Southern Pacific is laying a spur track to the Valley Construction Company's rock crusher at Oroville, Cal., and will use rock from this plant for ballasting a large section of its tracks in the Sacramento valley.

The Western Cut Stone Company, formerly dealing in cut stone exclusively, is putting up a large plant at Richmond, Cal., for the manufacture of artificial stone. Some work is already being done in this line, and the company is able to produce very good imitations of several varieties of limestone and sandstone, which find a ready market here. Several large contracts have already been taken for this material, notably one for the residence of Jacob Stern. The company's product is a strictly high-class article, the stone produced synthetically being almost the same in composition and texture as the article imitated.

The Mount Shasta Volcanic Tile & Cement Company, with factories at Igerna, Cal., will soon be in operation. Part of the machinery has already been installed, and the rest is in transit. Tests conducted during the past year show that the structural tile which they will manufacture are superior to anything on the Coast in quality, and the deposit of raw material in sight is practically inexhaustible.

The contract for the construction of the concrete drydock for the Government at Pearl Harbor, T. H., has been awarded to the San Francisco Bridge Company for \$1,760,000. The bid of C. M. Leach, of Boston, which was lower, was rejected on account of an irregularity in the guarantee check.

The Klikitat Irrigation & Power Company is preparing to install an immense irrigation system in Benton, Yakima and Klikitat counties, Wash., the plans calling for forty miles of cement pipe, 10 feet in diameter. The company is negotiating with the Patterson Cement Works for the pipe.

L. J. Allen, a rock and sand contractor of San Diego, Cal., is building a wharf at that city to handle his shipments. He has a large contract with the Government for improvements on San Diego harbor.

The Pacific Coast Gypsum Company, of Vancouver, B. C., is planning extensive improvements, including the enlargement of its bunkers at Gypsum, Alaska, from 1,000 to 3,000 tons, and the building of a new plant at Vancouver and increasing the capacity of the plant at Tacoma, Wash., by 75 tons a day.

The Henry Cowell Lime & Cement Company is making shipments of from 700 to 900 barrels a day from its plant at Santa Cruz, Cal.

F. C. Fisk, an engineer, of Buffalo, N. Y., is in charge of the construction of the Inland Portland Cement Company's plant at Metaline, Wash., and it is expected that the plant will be completed within a year. The company will also install a large water-power plant.

The Ogden Portland Cement Company has been incorporated in Ogden, Utah, with a capital stock of \$500,000, by W. J. Bell, H. C. Day, R. Bristol, H. C. Becker and A. T. Thoits. The company will erect at \$30,000 plant, and will use material found near Brigham City.

The city of Los Angeles has purchased two rock quarries, and called for bids on a number of rock crushers.

The Holmes Lime Company has developed a large trade in its "Vigorite" brand of hydrated lime with the horticulturists in this State for use as a dust spray for fruit trees. Growers who have used the dust spray believe that it will be universally employed within the next three years, and state that the results are above expectations. As a preventive of red spider, codlin moth, etc., the dust spray is pronounced by horticultural experts to be superior to the wet spray and more easily applied. This opens up still another field for the use of hydrated lime.

The Santa Cruz Portland Cement Company is making further improvements in its large plant at Santa Cruz, Cal., adding a \$50,000 stock house and an automatic mixing equipment. Heavy shipments are being

sent out from the plant every day, and the company is sending a large lot north on nearly every steamer.

The result of tests made last week from samples of cement taken from local warehouses are decidedly satisfactory to the California manufacturers. One of the local brands stood at the head of the list, and the rest were well ahead of the foreign samples.

## NEW ORLEANS AND VICINITY.

NEW ORLEANS, LA., June 17.—Building in New Orleans and vicinity during June has been inactive, and developments of the month show but comparatively few contracts in sight for the near future. This applies particularly to large buildings. There continues to be some large contracts let for municipal work.

One of the most important pieces of work to develop during the month was that contemplated by the Illinois Central Railroad in the improvement of its Poydras Street freight terminals. The company has acquired fourteen squares between Rampart and Claiborne streets, in the vicinity of Poydras Street, at a cost of approximately \$800,000, and will spend for buildings, paving and other improvements about \$1,200,000 more. The buildings to be erected are: Two inbound freight houses, 60'x985'; two outbound freight houses, 33'x985'; three sheds, 76'x550'; one shed, 300'x195'; two sheds, 70'x680' and 40'x215'. The letting of contracts will follow the company getting the franchise now before the city council. Hunter C. Leake, General Agent at New Orleans, or A. S. Baldwin, Chief Engineer, Chicago, can give information.

Plans have been drawn by architects Crosby & Henkel for a four-story brick and concrete warehouse for H. T. Cotton & Company, wholesale grocers, to be erected in the square bounded by Tchoupitoulas, Notre Dame, Girod and Constance. The specifications call for the use of about 13,000 barrels of cement.

Favrot & Livaudais, architects for Mayer Israel & Company, clothiers, have let a contract to George J. Glover for the erection of a six-story brick and terra cotta building on Canal Street between St. Charles and Carondelet. Use will be made of existing walls, and cross iron beams 36 feet long will be strung from wall to wall. The floor will be of concrete, reinforced.

James Gary has secured the contract for a brick and concrete stable to be erected by Wells, Fargo & Company, the building to be 196'x64'.

Important sub-contracts on the Whitney-Central National Bank's new building at St. Charles and Gravier will shortly be let by George J. Glover, general contractor.

Cary Brothers, general contractors, have almost completed the Audubon office building at Canal and Burgundy streets. Kennedy & Adkin, of Cincinnati, are the architects.

The Louisiana State Bank, at Baton Rouge, will erect a seven-story brick building bank and office building.

A Catholic Church is to be erected at Lafayette, La., to cost \$50,000. Rev. W. J. Turlings is rector.

De Buys, Churchill & Labouisse, representing Philip S. Gardner, are drawing plans for a two-story concrete, brick and terra cotta building, to be erected at Laurel, Miss. Bids to be opened June 26.

Bids will be opened June 27 for a \$100,000 post-office to be erected at Gulfport, Miss. The material will be brick, stone and iron, with marble floors and tile roofs.

Caldwell Brothers, of Abbeville, La., were the successful bidders for the new brick school house at Alexandria, La., plans for which were drawn by Favrot & Livaudais; cost \$46,669.

Paving contracts aggregating more than half a million dollars were let during the month by the city, the Barber Asphalt Company getting the bulk of the work. The principal contracts were as follows:

Repaving Carrollton Avenue, lake side, from the New Basin to Canal Street, Barber Asphalt Company, \$30,513.50; paving river side of Carrollton Avenue from New Basin to Canal Street, and both sides of the avenue from Canal Street to City Park Avenue, Barber Asphalt Company, \$147,952.50; paving Carrollton Avenue from St. Charles Avenue to the New Basin, Barber Asphalt Company, \$319,010; paving Elmira Street from Slidell to Newton, Southern Bitulithic Company, \$18,263.75; paving Newton Street from Teche to Elmira, Southern Bitulithic Company, \$46,956.

The work of the architects employed by the city to draw up New Orleans' first building code, has been completed and the code is now before the city council for adoption. Its preparation was largely the result of agitation on the part of insurance companies, which alleged that the companies were compelled to charge higher rates than would be the case were there an effective building code in existence.

The Delta Contracting Company has been organized here to do a general contracting business; capital, \$25,000. The first officers and directors are: Herman W. McLean, president; Tinnie Stevenson, vice president; Benjamin F. Burke, secretary-treasurer.

The Fairchild-Bowlus Company, Ltd., has been organized with a capital stock of \$25,000 to take over the business of the partnership firm of Fairchild & Bowlus, building material.

J. F. Coleman, one of the most prominent construction engineers in New Orleans, has formed a partnership with Samuel W. Young, under the title of J. F. Coleman & Company.

The Alfred Hiller Company, Ltd., announce that they are closing out their stock of cement, plaster, brick, sewer pipe, roofing material, etc.

The Marine Lime & Shell Company was organized here during the month with a capital stock of \$150,000. The officers and directors are: President, William J. Kelly; vice president, Louis A. Bringer; secretary treasurer, Ernest Dale Owen. These, with Bryan Y. Craig and N. P. Trist, are the directors. The company is authorized to manufacture and sell lime, cement and brick.

Gus D. Levy, Potentate of Jerusalem Shrine Temple, announced recently that the Shriners will erect a temple to cost not less than \$100,000 on property lately purchased at St. Charles and Clio streets.

Sites have been selected and money provided by the city council and school board jointly for the erection of three new high school buildings in New Orleans. Plans will likely be begun within the near future.

Charles B. Duke & Company, building material, have moved from their old quarters to 723 Baronne Street.

The Standard Paving & Construction Company has been organized here with a capital stock of \$150,000. The officers and directors are: William H. Douglas, president; Michael J. Flynn, vice president; Harry McGeary, secretary.

C. D. Stewart, a Baton Rouge contractor, has secured the contract for the Elks' Home, at Clarksdale, Miss., to cost \$30,000.

W. I. Fegan, of San Antonio, Texas, is contemplating establishing a concrete factory at Taylor, Texas.

James Stewart & Company, contractors, have brought suit against the New Orleans Terminal Company for \$132,999.87, balance alleged to be due on contracts originally amounting to \$2,795,329, for the construction of the Chalmette ship, docks and buildings. The petition alleges that extra work was ordered and done and later construction was stopped.

James A. McGonigle & Sons, of Leavenworth, Kan., have been awarded the contract for the construction of all buildings at Fort Crockett, Texas, a new army post. The contract calls for the erection of five buildings at a total cost of \$347,801, with concrete floors, or \$339,473 without concrete floors. Bids for the officers' quarters were in excess of the appropriation and will be readvertised.

The Georgia Paving & Construction Company, L. A. Camp, manager, has let a concrete burial vault plant at Columbus, Ga., and it has just been placed in operation.

The city council of Ensley, Ala., has directed City Engineer V. E. Ohl to advertise for bids for the construction of a 7-foot storm sewer to run from the end of the present sewer at Avenue H to the village creek.

The King Lumber Company, of Charlottesville, Va., were the successful bidders for the new post-office at Lake Charles La., their bid being \$106,814.

Charles H. Shaw, of Muskogee, Okla., has secured the contract for a five-mile extension of the street paving at Lawton, Okla., the material to be Oklahoma natural rock asphalt. Contract price, \$240,551, or at the rate of \$1.85 a square yard.

The Turner-Hartwell Docks Company has been incorporated at Mobile, Ala., with a capital of \$200,000, and announced that it will erect warehouses and build a slip at Choctaw Point, at the foot of Maryland street, the work to cost \$150,000.

Paving contracts amounting to \$31,540.78 were awarded bidders at Selma, Ala. One secured by the Graves-Miller Company, of Birmingham, calls for five blocks with vitrified brick; cost, \$13,334.48; the Memphis Asphalt Company secured the contract for three and a half blocks of asphalt paving at \$18,206.30.

The Santa Fe Railroad will build a passenger station at Temple, Texas, to cost \$80,000. It will be 45½x264 feet, and will be two stories. Brick and plaster will be used, with Spanish tile roof.

Hull & Preager, of Victoria, Texas, have drawn plans for a three-story brick building to be erected there by C. S. E. Holland, Theo. Buhler and J. F. Welder; cost \$25,000.

The Montgomery, Ala., school board has awarded Algernon Blair the contract to build a new four-story

## LOUISVILLE DISTRICT.

brick school house at McDonough and Scott streets, to cost \$103,000. Plans were drawn by Architect Lockwood.

The Valley Dry Goods Company, of Vicksburg, Miss., has given the contract for its new five-story store to H. H. Davis. Brick and concrete will be used.

Mother General Columbia, of the Sisters of Mercy, Shreveport, La., is having plans drawn for a sanitarium to cost approximately \$100,000.

Herman Loeb, of Shreveport, will erect a \$50,000 cotton compress at Longview, Texas.

Dorris & Baldwin have secured the contract to erect the First Presbyterian Church, at Beaumont, Texas; cost, \$24,646.

J. J. Nathan is having plans drawn at Beaumont, Texas, for a two-story brick apartment house to be erected at Broadway and Magnolia streets; cost, \$20,000.

The Masonic Lodge, of Mansfield, La., is having plans drawn for a three-story lodge, store and office building.

The Louisiana Railroad Commission has authorized the Cumberland Telephone Company to make improvements aggregating \$100,000 in its Shreveport exchange.

The Jett Brothers Contracting Company is erecting a \$35,000 Gothic chapel at Spring Hill College, near Mobile.

The Alabama Brick Manufacturing Company has been incorporated at Riverside, Ala., with a capital stock of \$50,000, and work has begun on the plant. The company has bought forty acres of fire clay land with a depth of 30 to 40 feet on the Southern Railway's tracks. Horace C. Alford, president of the company, says that the plant will be in operation Aug. 15, with a capacity of 50,000 fire brick daily.

As a result of experiments conducted at Bay City, Texas, by Mr. Hughes, a company will be formed there to manufacture brick.

The Brick & Stone Masons' Reading Club, a social organization, has been incorporated at Birmingham, Ala., by W. L. House, W. W. Brooks and C. C. Caperton.

Hamilton Johnston, for several years city engineer of Jackson, Miss., has been made general manager of that city's waterworks system.

As a result of statements made by O'Gara & McPoland, contractors, the grand jury of Jefferson county, Alabama, will investigate the alleged brick combine existing in Birmingham. The contractors alleged that they could not buy brick from certain Chattanooga and Birmingham concerns, and that only contractors in the favor of those concerns could have orders filled.

The Sherman Brady Pressed Brick Company is constructing a large plant at Houston, Texas, for the manufacture of pressed brick. The work of installing the machinery is now in progress.

Gus A. Kampman, of Nicholson, Miss., has sold his brick plant there to Schneider Bros., of St. Joseph, La.

The Excelsior Brick Company has been incorporated at Montgomery, Ala., to manufacture building brick, pressed brick, terra cotta drain or roofing tile, vitrified brick and all cement products. The capital stock is fixed at \$10,000. Incorporators: F. A. Rhodes, president; W. M. Blakey, secretary; John Klinge, treasurer, all of Montgomery.

J. G. Kapler's new brick plant at Giddings, Texas, began operation the middle of May. Its capacity is 20,000 a day.

The Seguin Vitrified Paving & Face Brick Company has been organized at Seguin, Texas, with a capital stock of \$6,000. Incorporators: O. G. Pearson, H. M. Wurzbach, C. E. Tips and R. L. Wuppermann.

Fire caused considerable damage to the plant of the Eufaula Brick Company, near Eufaula, Ala., May 28. The loss is covered by insurance.

The Turnerized Metal & Canvas Roofing Company, of Bessemer, Ala., has recently increased its capacity in order to be able to fill orders it is receiving. J. O. Hoover, manager, says he expects to double the capacity in the near future.

R. E. Wright is building a brick plant at Columbia, La.

James Blake, of Bonham, Texas, has let the contract for the construction of a brick plant at Paducah, Texas; capacity, 10,000 daily.

Thibodeaux & Guillot have secured the contract for a brick school building at Breau Bridge, La., to cost \$12,994.

Architect W. F. Steinman, of Arcadia, La., is drawing plans for a \$20,000 school building for that town.

President Isaac Baron, of the Shreveport School Board, is having plans drawn for a \$60,000 school building for Shreveport, La.

Architect S. F. Brickley & Son are drawing plans for a \$10,000 school house for Lillian, Texas.

LOUISVILLE, June 15.—The building, contracting and building supply situation is good, and is improving right along. Nearly all the dealers and contractors report business as becoming much more active, and say that the work done this summer will possibly exceed that done in any other summer for a long time. Building permits for May, 1909, numbered 345, with an estimated cost of \$255,000, compared with May, 1908, 263 permits, estimated cost of \$202,000. This shows an increase of 26 per cent.

The allied trades also report plenty of work doing in their respective lines. Those who make a specialty of roofing and asphalt work are well satisfied with the situation. There is a good demand for fire brick, and sewer and tile manufacturers have plenty of orders on hand.

The Central Concrete Construction Company report the business outlook as being very bright indeed. They say they have plenty of orders on hand to last some time.

The National Concrete Construction Company say that while business is rather quiet, it is a good deal steadier than it has been.

The Southern Roofing and Paving Company report business as very good, particularly on out-of-town contracts, they having four crews working out of town at the present time. One of the big jobs they have on hand is the floors and foundations of the new plant of the Inman Ice Company, of New Albany, Ind. They are also doing a big job at Irvine, Tenn., for the Queen and Crescent Railway.

The Kentucky Wall Plaster Company, the Atlas Wall Plaster Company, and other concerns in the city, all report business very good, all plants running to full capacity.

Mr. Burrell, of the Burrell and Walker Fire Brick Works, says their business is good and improving right along.

The Ohio River Sand Company report business as being only fair.

The Alfred Struck Company have been awarded the contract for the construction of the Coagulating Basin of the Louisville Water Company, the contract price being \$104,000. This is mostly concrete work.

The City of Bowling Green, Kentucky, will install a filter to its water plant. The city owns the water plant, and for many years it was enabled to furnish clarified water in the reservoir. The increasing demand for the water privileges, however, has forced the water company to use the pumps day and night, with the result that when the Barren river is high the citizens are furnished muddy water. The matter having been taken up in the City Council, the contract has been let to the Roberts Filter Company, of Philadelphia, for a mechanical pressure filter. Work will begin at once and it is expected to have the filter in operation within three months.

Judge Gordon, in the Circuit Court of Louisville, has held that the Louisville Board of Sewerage Commissioners is legally constituted, and that the Board has the right to condemn land itself, as well as a right of way over or through land.

At a recent meeting of the Louisville chapter of the American Institute of Architects, the question of fireproofing of buildings was discussed thoroughly, particularly as to how near frame buildings should be built in the fireproof district of the city. At the next meeting of the Chapter this question will be further discussed.

Trippier & Co., of Peru, Ind., have been awarded the contract for constructing the Oak street under pass, between Eighth and Tenth streets, under the Louisville & Nashville Railroad. Their bid of \$55,000 was the lowest submitted to the Board of Public Works, and this does not cover all of the work by about \$15,000. The Louisville & Nashville Railroad Company will pay half of the expense of this work. There were ten bidders in all. Aside from the bid of Trippier & Co., sealed proposals were received from the following contracting firms: M. H. McGovern & Co., of Chicago; The Ferro-Concrete Construction Company, of Cincinnati; Henry Bickel & Co., of Louisville; W. F. Nugent & Bro., of Louisville; the Fruin-Colin Construction Company, of St. Louis; Marvin Blain, of Joliet, Ill.; The Marion Construction Company, of Marion, Ind.

Work has been begun on the new Walnut Street Theatre, on Walnut street, just west of the New Seelbach Hotel, and the building will be ready for the fall theatrical season.

Sixty members of the junior chemistry class of the Louisville Male High School took part in an inspection of the processes and machinery of the plant of the J. B. Speed Cement Company's mill at Speed's, Ind. The trip was made in a special car in charge of Prof. Clarence C. Quaife, head of the chemistry department of the Male High School, and while at the plant the boys were the guests of Will Speed, general manager.

A change of plans, which contemplated building a

plant in the rear of the George G. Fetter Printing Company, on Main street, between Fourth and Fifth, by the George G. Fetter Power and Lighting Company, has resulted in the purchase of a site on the east side of Bullitt street, between Main and the river, for the construction of the building. The plant will be three stories, and fireproof, built of steel and concrete throughout, and the estimated cost is \$200,000.

The big trunk sewer, which will drain a large area of the northeastern part of the city, between Walnut street and the river, will soon be under course of construction. Bids for the work were opened by the Sewer Commission last week, and the firm of Blackstaff Engineering Company was apparently the lowest bidder. The contract will amount to about \$150,000. Other bidders were Schnable & Son, Chicago; E. G. Knave Bros. Company, Portsmouth, O.; Henry Bickel Company, Louisville. The contract for the Magazine street sewer, from Twenty-fourth to Twenty-sixth street, was awarded to E. A. Barker & Son, Louisville. This firm was formerly in Chicago, but since the sewer work began has moved its headquarters here. The Blackstaff Engineering Company is a Philadelphia concern.

The assignment of The Weber Company, which is represented in Louisville by its employees, who are prosecuting the work on a section of the big Southern outfall sewer, was entered in the office of the County Clerk a few days ago. It was filed in the Cook County Clerk's office in Chicago on May 12 and is in favor of the company's creditors. Ewin F. Kamp, of Chicago, is named as assignee and has qualified by giving bond of \$20,000. Altogether there are 123 separate accounts against the firm listed in the schedule which accompanies the assignment. The total is not given. Among the largest creditors is the Hamilton National Bank, of Chicago, which holds notes calling for \$25,000. Bills of various smaller sums owed to twenty-two Louisville concerns are listed. The total value of the assets of the company is not given, either. Much of what property is listed is mortgaged or already assigned. In the last few weeks many suits have been filed against the construction company in this court and liens in the County Clerk's office.

The Board of Public Works has awarded contracts for the laying of new sidewalks with granitoid on both sides of Third avenue, between Breckinridge and St. Catherine, and on the west side of Brook street, between Broadway and Jacob, to the Fruin-Colin Company, who were the lowest bidders. The estimated cost, which is to be paid by abutting property owners, is \$3,000.

The Board of Public Works opened sealed proposals for the construction of seventy-four pieces of sidewalk, 80 per cent of which will be of granitoid. This is the largest sidewalk letting ever made by the board. There were many bidders, over 600 sets of blanks being taken out by the twelve contractors who bid on the work. It will take several days to figure out the lowest bidders. The prices were about the same as usual for this class of work.

## Business Improving In All Parts of the Country.

NEW YORK, N. Y., June 8.—Every test by which trade conditions are determined records improvements, says *Dun's Review* of the week. In the iron and steel trade the progress made is, indeed, extraordinary, and again does this branch of industry give a signal proof of its power to rise out of the depths of depression with wonderful rapidity.

Increased orders, expanding production, higher prices and wages, and in some lines records approaching even the high figures before the panic—such are the reports that now come from the trade every week; while the stock of the biggest producer is to be listed on the French Bourse, a notable financial development.

Bank clearings during May were not only 19.5 per cent greater than a year ago, but showed a gain over 1906, while for the past week they recorded an increase over 1908 of 8.8 per cent in New York and 12 per cent outside of New York.

Railroad earnings continue favorable, the record for three weeks being 14.7 per cent increase over 1908 and 11.6 per cent decrease as compared with 1907. Advances from nearly all the leading cities speak of greater activity in retail and wholesale lines.

## Business Recovering Fast.

The weather is generally good, and while the crop reports are not uniform in all sections, it is noteworthy that the domestic agricultural outlook is increasingly favorable, while the foreign crop situation seems very dubious, so that wheat this week has again broken the high record price. Thus the recent progress making toward full business recovery in the United States is most notable and it is facilitated by favoring financial conditions.

The effects of the late crisis are still to be seen



in the large volume of commercial defaults, although this seems a passing condition, as the aggregate of these in May was the smallest of any month of this year. The total foreign commerce of the port of New York during the past week was \$4,686,976 greater than in 1908 and \$9,832,071 greater than in 1907, the gains being in both imports and exports.

Conditions in the iron and steel trade have advanced to the most satisfactory state since the severe setback in the fall of 1907, and in some instances business during the month of May was above the best records prior to that time. Although the brisk demand now shows some signs of contraction, as is seasonable, prospects for the future continue decidedly bright.

Larger employment of labor and higher wage scale create a greater demand for necessities and luxuries that cannot fail to be reflected in trade at both wholesale and retail. Report from some districts indicate that demand for plates and shapes taxes the capacity of mills, and for the month of May alone business in structural lines amounted to about 225,000 tons.

#### Failures Lightest In Months.

May clearings are close to the best ever recorded in that month, while May failures and liabilities are the lightest in twenty-one months, says *Bradstreet's State of Trade*. Collections, while better than in earlier months, are still not better than fair, but there are reports of fewer settlements by notes in some sections. Money is still easy, a sign in itself that trade activity is not at its best, and ease in this line favors activity of speculation in securities and commodities.

All in all, the situation presents many favorable features, but there is still an underlying feeling of conservatism, and while less is heard of the influence of tariff changes on future trade, there is still apparent a disposition to await the outcome of present legislative action and a clearer view as to possible crop yields. Coal, though slightly more active for steam purposes, is still quiet as a whole, but coke shipments are larger, stocks smaller and prices firmer. Wool is quieter, but no less strong, and reports from the manufacturing branches of that trade and of silks and cottons are of considerable activity. Leather prices are very strong, reflecting the strength of hides and reports of closely held stocks, but shoes, while being ordered more freely, are not selling as heavily for fall as expected. Eastern shipments are, however, 24 per cent larger than a year ago.

#### Good Products Are High.

Commodity prices, particularly of food products, maintain close to record levels of the year, consequent high cost of living is credited with in some measure checking full distribution.

Grain crops have made a distinct advance this week, winter wheat improving, spring wheat showing normal growth and fine condition, oats helped by rains and acreage. There are some irregularities. Best reports as to winter wheat come from east of the Mississippi River, a section which last fall had a poor start. Kansas reports are conflicting.

Smaller area balances better condition, and a crop not exceeding 400,000,000 bushels is indicated. The tone of spring wheat reports is excellent, and the late start is reported already made up for. The Oklahoma state crop reports show loss in condition in May, but Ohio and Kentucky gained greatly. Harvesting is active in Texas and has begun in Tennessee. It is dry in Texas, but rather too moist in Tennessee. In the Pacific Northwest good rains have made prospects good for large grain and fruit crops. California crops look better. Grain and grass crops in eastern coast states promise excellently.

Stock market transactions in New York have been active and somewhat excited. Manipulation has been apparent in the movement, but extensive realizing sales were offset by the buying attracted by the remarkable rises scored in many instances. Bonds were strong, especial attention having been paid to various convertible issues. Foreign exchange is firm at 4.8795 for demand sterling, an engagement having been made on Wednesday of \$1,000,000 gold for shipment to Paris.

Today the National Association of Master Plumbers of the United States holds its convention at Detroit, Mich. Its sessions will continue for three days. Sanitary matters of great importance to the people of this country will be discussed, which will result in much good to the advancement and development of sanitary science in general and to the welfare of the people in particular.

The master plumbers of this organization are men whose energetic and well-directed efforts have done much to eliminate dangers from defective systems of plumbing in homes in the last quarter of a century.

## Side Talk

George W. De Smet, whose offices are located in the Chamber of Commerce building, Chicago, has been meeting with great success in placing his waterproofing compounds, Dehydratine, Symmentrex and Hydratite, upon the market. These waterproofers have been well known for years and Mr. De Smet states that wherever they have been used satisfaction always results. Numerous letters have been pouring into his office lately from some of the leading architects of this city and elsewhere, assuring him of the effectiveness of these compounds and stating that they would continue their use in all building operations where such agents were necessary.

Dehydratine is used for four distinct different purposes and is numbered correspondingly. Number One Dehydratine, a furring compound, is used for protecting interior walls from dampness. In this, water-resisting agents are scientifically combined. These are so prepared as to interpose a firm bond between the plaster and the inner face of the brick or stone walls, over which the Dehydratine makes an impenetrable film, thus intercepting all dampness from the outer walls and preserving the plaster from damp stains. A gallon of Number One Dehydratine will cover from sixty-five to eighty square feet, the capacity varying with the porosity of the surface.

Number Two is absolutely colorless and is used for preserving exterior walls from the penetration of water from rainstorms, from noxious atmospheric influences, and from the disfigurement known as efflorescence.

Number Three protects marble, granite and limestone from stains caused by absorption of moisture and from the injurious effects of chemical action communicated from the surrounding masonry, while Number Four is used to make foundation walls moisture proof, basement walls dry and wholesome.

Mr. De Smet has numerous pamphlets which set forth the many merits of Dehydratine, the manner or mode of using, and will be pleased to forward them to anyone interested, upon request.

The high school and addition at Oak Park, of which we give an illustration, Patton & Miller, architects, used about 2,000 gallons of Number One Dehydratine on its walls. Dampness is not known here now, and not a stain can be found anywhere.

The R. T. Crane residence, Lake Shore Drive, Chicago, Shipley, Rutan & Coolidge, architects, had all the stone coated with Number Three Dehydratine before it was put into the building. As this is one of Chicago's show places, it speaks volumes of praise in favor of Dehydratine.

The W. R. Schmidt building, located on the corner of Jackson and Green streets, Wm. R. Gibb architect, required about 800 gallons of Number One Dehydratine to assure a perfectly stainless condition for all time. In fact Mr. De Smet has given us so much data regarding the different buildings that have been treated with this preparation that lack of space prevents us from even trying to enumerate one-tenth of the principal edifices.

In speaking of Symmentrex, he styles it a liquid concrete and says that it gives that perfect flat finish for masonry and plastered surfaces. It is not a paint. It has no artificial gloss. It is the perfected result of scientific experiments in cement and oils, so combined as to produce complete adhesiveness, beauty in color effect, with water resistance. It can be had in a variety of shades. The tints are rich, mellow, restful to the eye and



HIGH SCHOOL AND ADDITION AT OAK PARK, ILL.

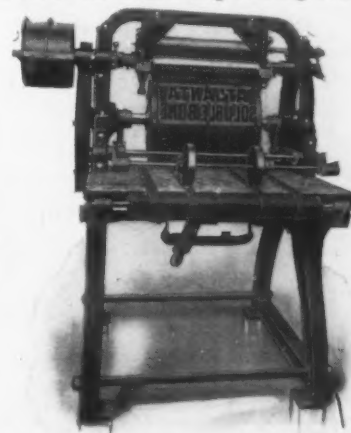
pleasing to the artistic taste. They will not fade, and provide a superior water resisting coating for masonry surfaces and a coating that is unaffected by atmospheric changes.

Hydratite is a compound that makes concrete impervious to water. He guarantees results.

Mr. De Smet is also sole distributor for Vulcanite Portland cement and for the Berkshire "Snow White" Portland cement. This latter cement is used for all outdoor and indoor work, where a permanent pure white effect is desired.

Albert Moyer, Assoc. Am. Soc. C. E., has written a treatise entitled "Specifications for Using White Portland Cement Mortar." This is published for gratuitous distribution by the Berkshire White Portland Cement Company and can be secured of Geo. W. De Smet. It is profusely illustrated with handsome cuts of a number of prominent buildings that have been treated with Berkshire Snow White. It covers the subject matter thoroughly and will be of interest and benefit to all cement workers.

Every large user of bags for cement, plaster or other material requiring bags has an expense that counts up in the year. Many manufacturers have equipment for repairing the old bags but in most cases they have not successfully been able to reprint these old bags and thus increase their life as well as improving their appearance for their subsequent appearances. Manufacturers pay as much as \$1.25 per thousand and freight both ways to the bag factory. This means quite an expense but this can be saved by the use of the Koehler Bag Printing Press. This



THE KOEHLER BAG PRINTING PRESS.

machine was invented for the fertilizing manufacturers and after two years' operation shows that it is very easy to print 10,000 bags a day at a cost of 50 cents per thousand. The economy shown will pay for its cost in a year.

The whole cost will probably not run over \$500 and the economy of say 65 cents a thousand, to a concern which buys from 100,000 to 500,000 bags a year is quite a saving.

This machine requires floor space of 4'x4', stands 5' high, and weighs 1,100 pounds. It requires two horsepower, steam or motor. All print type is made of solid cold rolled sheet brass,  $\frac{3}{8}$ " cuts  $\frac{1}{8}$ " deep, which insures a sure and distinct impression.

This machine is made by the Henry L. Koehler Manufacturing Company, Louisville, Ky.

#### Exceeded the Guarantee.

The Maxecon pulverizers have given perfect satisfaction wherever they have been used. They are manufactured by the Kent Mill Company, 170 Broadway, N. Y.

It is something to make good a guarantee and the purchaser is always satisfied when machinery accomplishes what is claimed for it, but we learned recently where the Kent Mill Company more than made good on its claims. One of the western mills recently installed a battery of Maxecon in both the raw and the clinker end of their plant.

In the raw end they were sold with the guarantee that they would grind three tons per hour, 95 per cent to pass a 100-mesh screen, and 80 per cent to pass a 200-mesh screen. The results were five tons per hour, 98 per cent of which passed a 100-mesh screen and 92 per cent passed a 200-mesh screen.

In the clinker department the guarantee called for the Maxecon to grind nine barrels of clinkers per hour, 95 per cent of which was to pass a 100-mesh and 80 per cent to pass a 200-mesh screen. The results were fifteen and one-half barrels an hour, 98 per cent of which passed a 100-mesh and 89 per cent a 200-mesh screen.

These results were highly gratifying and prove beyond question the superiority of the Maxecon mills.

## CLASSIFIED ADVERTISEMENTS

Advertisements will be inserted in this section at the following rates:

For one insertion .....25 cents a line  
For two insertions.....45 cents a line  
For three insertions.....60 cents a line

Eight words of ordinary length make one line. Heading counts as two lines. No display except the headings can be admitted. Remittances should accompany the order. No extra charges for copies of paper containing the advertisement.

### EMPLOYEES WANTED

#### WANTED.

If you are in need of or wish to sell anything which comes under any of these classifications, write us. If you have something not coming under these classifications we will create one for you.

#### HELP WANTED.

Salesman; a man experienced in the selling of hard wall plasters, finishes, etc.  
Address BOX 706, care ROCK PRODUCTS.

### EMPLOYMENT WANTED

#### WANTED-POSITION

as superintendent of stone crushing plant or concrete plain and reinforced. Address, BOX 705, care ROCK PRODUCTS.

**THE HENRY MARTIN BRICK MACHINE MFG. CO.**  
LANCASTER, PENNA.

ROCK CRUSHING MACHINERY  
BRICK-MAKING MACHINERY  
CLAY WORKING APPLIANCES  
CEMENT BRICK MACHINERY  
SAND GRINDING MACHINERY  
SAND DRYERS, BRICK DRYERS, ETC.

SEND FOR PLANS AND ILLUSTRATED CATALOGUE

#### POSITION WANTED.

Mechanical engineer, specialist for sand-lime-brick plants with fourteen years' experience in Germany and the United States; graduate of the College of Technology of Neustadt, Germany, wants position. Has built and successfully managed sand-lime-brick plants in both countries and can give references. Address W. F. S., Box 701, care ROCK PRODUCTS.

### MATERIAL FOR SALE

#### FOR SALE.

Brass letters and figures to imbed in cement walks, curb blocks, etc.; reversed letters and name stamps to make impressions in cement.

Send for price list.  
H. W. KNIGHT & SON, Box R, Seneca Falls, N. Y.

### MACHINERY FOR SALE

#### CRUSHER FOR SALE.

Gates No. 4 Gyratory, in fine condition. Cheap.  
R. F., BOX 2, Sta. A., Cincinnati, O.

#### ENGINES AND BOILERS FOR SALE.

Engines—Corliss, Automatic and Throttling, all sizes from 1 to 500 H. P.  
Boilers—Horizontal, Portable and Vertical, all sizes from 1 to 200 H. P.  
Pumps, Heaters, Tanks, Sawmill and General Machinery.

Write for our prices on your requirements.  
THE HANDLE MACHINERY CO.,  
1745 Powers St., Cincinnati, O.

#### FOR SALE.

No. 3 Raymond Roller Mill with 60-inch Sturtevant fan. Vacuum separator, with all fixtures complete and in good order. Address  
ST. LAWRENCE TALC & ASBESTOS CO.,  
Massena, N. Y.

#### FOR SALE.

No. 1 Sturtevant mill, new, never used; for sale at cost f. o. b. cars Genoa, Ohio. Address  
CRAWFORD & TARBELL,  
46 Colonnade Bldg., Toledo, Ohio.

**Ernest Schmatolla**

Consulting Chemical Engineer  
Specialist in the designing, construction and operation of Producer Gas Fired Kilns, for lime and other rock products.

150 Nassau Street, NEW YORK CITY

#### FOR SALE CHEAP.

G No. 9 Ingersoll-Rand steam drill, 2 sets steels; 10-ton stiff leg derrick, pulleys and cable; 12-inch white pine, both good as new. Address  
GEO. S. RODOCK, Frederick, Md.

#### FOR SALE.

One 35 H. P. horizontal tubular boiler. Used but little. Removed to make room for a larger one. Hartford Insurance. Complete with all trimming, \$125.00. Address BOX 704, care ROCK PRODUCTS.

#### FOR SALE.

9 H. S. Palmer cement block machines.  
1 Half yard self-dumping car.  
1 Half yard Drake stationary concrete mixer.  
Write D. J. KENNEDY CO.,  
No. 6306 Frankstown Ave., Pittsburg, Pa.

### BUSINESS OPPORTUNITIES

#### GYPSUM ROCK PLANT SITE.

If you are interested in a site for a gypsum rock plant write M. J. Skivington, of Mumfords, N. Y.; he can interest you. Located near four railroads.

#### ROCK PRODUCTS.

Modern lime plant for sale, fine market, moderate competition, free water power, clean rock, work year around, patent kilns, oil fuel. Cash or terms. Address,  
A. KNOWLES, 985 Folsom St.,  
San Francisco, Cal.

#### FOR SALE.

150 acres of Portland cement rock, with suitable clay and abundance of natural gas on same property; rock lists 91.64 per cent carbonate of lime. Free power here, also marl bed close to railway. Address  
JAS. A. HEDGES, Nanticoke, Ontario, Canada.

### CORLISS ENGINES

1 16 x 30 Frick Girder Frame.  
1 18 x 42 Allis "  
1 24 x 30 Clark Heavy Duty.  
1 26 x 30 "  
1 30 x 48 Cooper Girder Frame.

#### AUTOMATIC ENGINES

1 13 x 14 Brownell self contained on sub-base.  
1 13 x 13 Ball.  
1 20 x 30 Buckeye Heavy Duty.  
All sizes from 20 to 300-H. P.

BELTING, SHAFTING & PULLEYS  
BOILERS—TUBULAR OR WATER TUBE  
**Cleveland Belting & Machinery Co.**  
Cleveland, Ohio

## BOOKS FOR THE TRADE

### Architects and Engineers

Practical Reinforced Concrete  
H. B. Andrews. Price \$2.00.  
Analysis of Elastic Arches of Steel, Masonry and Reinforced Concrete  
Joseph W. Balet. Price \$3.00.  
Theory of Steel-Concrete Arches and Vaulted Structures  
Wm. Cain. Price \$0.50.  
Concrete Country Residences  
Price \$1.00.  
Graphical Handbook for Reinforced Concrete Design  
John Hawkesworth, C. E. Price \$2.50.  
Architects' and Engineers' Handbook of Reinforced Concrete Construction  
L. J. Mensch. Price \$2.00.  
Concrete and Reinforced Concrete Construction  
Homer A. Reid. Price \$5.00.  
Theory and Design of Reinforced Concrete Arches  
A. vid Reuterdaal. Price \$2.00.  
Treatise on Concrete, Plain and Reinforced.  
F. W. Taylor and S. E. Thompson. Price \$5.00.  
Concrete Engineers' and Contractors' Pocketbook  
Wm. F. Tubbsing. Price \$1.00.  
Principles of Reinforced Concrete Construction  
F. E. Turneure and E. R. Maurer. Price \$3.00.  
Concrete Steel  
W. N. Twelvetyrees. Price \$1.90.  
Handbook on Reinforced Concrete  
F. D. Warren. Price \$2.50.  
General Specifications for Concrete Work as Applied to Building Construction  
Wilbur J. Watson. Price \$0.50.  
American Engineering Practice in the Construction of Rotary Portland Cement Plants  
B. B. Lathbury and C. Spackman. Price \$2.00.

### Cement and Lime Manufacturers

Manufacturer of Hydraulic Cement  
A. V. Bleininger. Price \$1.25.  
Limes, Cements and Mortars, Concretes, Mastics, etc.  
G. R. Burnell. Price \$0.60.  
Portland Cement; its manufacture, testing and use  
David B. Butler. Price \$5.00.  
Instructions to Inspectors on Reinforced Concrete Construction  
Geo. P. Carver. Price \$0.50.  
Lime, Mortar and Cement  
A. I. Dibbin. Price \$2.00.  
Cements, Limes and Plasters  
Edwin C. Eckel. Price \$6.00.  
Practical Treatise on Limes, Hydraulic Cements and Mortars  
Gen. Q. A. Gillmore. Price \$4.00.  
Mortars, Plasters, Stuccos, Concretes, Portland Cements and Compositions  
F. Hodgson. Price \$1.50.  
Experimental Researches upon the Constitution of Hydraulic Mortars.  
H. LeChatelier. Price \$2.00.  
Concrete Factories  
Robert W. Lesley. Price \$1.00.  
Portland Cement; Composition  
Richard K. Meade. Price \$3.50.  
The Constitution of Hydraulic Cements  
S. B. Newberry. Price \$0.50.  
Manufacture of Concrete Blocks  
Wm. M. Torrance and others. Price \$1.50.  
Practical Cement Testing  
W. Purves Taylor. Price \$3.00.  
Notes on the Testing and Use of Hydraulic Cement  
Fred P. Sutcliffe. Price \$1.00.  
Calcareous Cements  
G. R. Redgrave & Charles Speckman.  
"Portland Cement from a Financial Standpoint"  
By Edwin C. Eckel C. E. Price \$2.00.

### Cement Users

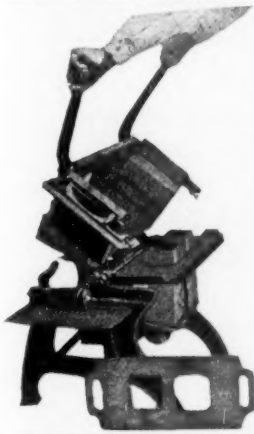
Foundation and Concrete Works  
E. Dobson. Price \$0.60.  
The Uses of Hydraulic Cement  
Frank Harvey Eno. Price \$1.00.  
Portland Cement for Users  
Henry Falja and D. B. Butler. Price \$1.20.  
Cements, Mortars and Concrete  
Myron C. Falk. Price \$2.50.  
Reinforced Concrete  
W. H. Gibson and W. L. Webb. Price \$1.00.  
Concrete System  
F. B. Gilbreth. Price \$5.00.  
Hand Book of Cost, Data  
Halbert P. Gillette. Price \$4.00.  
Concrete Construction  
H. P. Gillette and C. S. Hill. Price \$5.00.  
Cement Workers' and Plasterers' Ready Reference  
H. G. Richey. Price \$1.50.  
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Fred P. Spalding. Price \$2.00.  
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Concrete  
Edward Godfrey. Price \$2.50.  
Reinforced Concrete  
C. F. Marsh and Wm. Dunn. Price \$7.00.  
Practical Treatise on Foundations  
W. Patton. Price \$5.00.  
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**ROCK PRODUCTS, 355 Dearborn Street, CHICAGO**



# Foote's Leader AUTOMATIC CEMENT BLOCK MACHINE

We use the Walter Action Exclusively



The Mold is turned, the cores withdrawn, the block released without removing the hands from the levers.

Using and controlling the **WALTER ACTION**, which is to the Cement Block Machine what the Appleby Knotter was to the self-binder.

It's the limit of human ingenuity. If you are making blocks for profit you **MUST** have a high speed machine, and you can then compete with anyone.

It costs no more than an old-fashioned machine where each operation must be done separately. The principles are in keeping with the 20th Century. The up-to-date man, in the matter of equipment, is the one that makes the money. **WE ARE OLDEST IN THE FIELD.** Send a postal for our Catalogue. There are lots of good things in it you want to know and it's **YOURS FOR THE ASKING.** Write to-day.

**The J. B. Foote Foundry Company**  
Dept. 5, FREDERICKTOWN, O.

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**MONON ROUTE**

EXCELLENT SERVICE

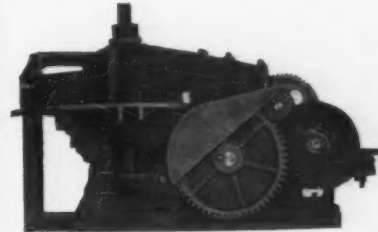
BETWEEN

Chicago  
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Electric Lighted Standard Sleepers on Night Trains, Parlor and Dining Cars on Day Trains

Frank J. Reed, G.P.A. E. P. Cockrell, A.G.P.  
**CHICAGO**

## Sand Lime Brick Machinery

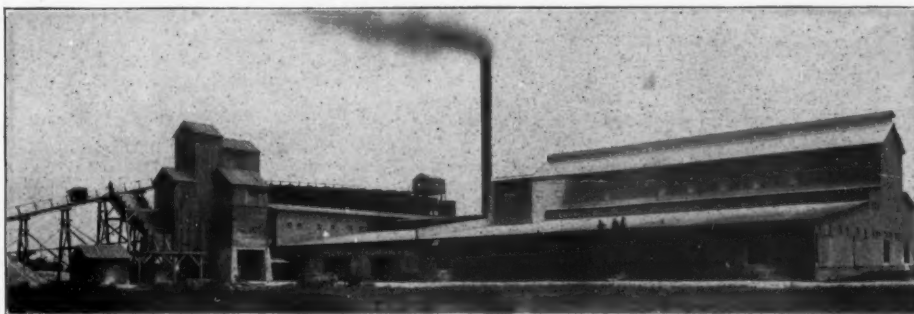


### The Perfection Press

Contains few parts, but exerts tremendous pressure—and all the pressure is put on one brick. This press is especially adapted to making fine face brick.

**The Cleveland Brick Machinery Co.**

Wickliffe, Ohio



WORKS AT GIBSONBURG, OHIO  
Largest Lime Manufacturing Plant in the World

## Banner Hydrate Lime

has taken its place in  
the front rank

Manufactured by the

**National Mortar and Supply Co.**

209 Ninth Street

PITTSBURG, PA.

## Index to Advertisements

Aetna Powder Co..... 15	Century Cement Mach. Co... 80	Good Roads Mach. Co..... 69	Mencham & Wright..... 43	St. Louis Portland Cement Co. 2
Alma Cement Co..... 1	Charles, J. M..... 66	Harbison-Walker Refractories 13	Mitchell Lime Co..... 13	Sandusky P. C. Co..... 8
Alpha Portland Cement Co.. 2	Chattanooga Paint Co..... 61	Co..... 1	Monon Route..... 61	Schmatolla-Ernest..... 60
Alsing, J. R., Eng. Co..... 71	Chemical Stucco Retarder Co. 79	Howell Mining Drill Co..... 82	Morehouse, N. J..... 68	Scioto Lime & Stone Co..... 14
American Cement Co..... 84	Chicago Belting Co..... 1	Hudson Mfg. Co..... 63	Mostberger-Langner Iron Co.. 16	Sharon Steel Hoop Co..... 73
American Cement Roofing Co. 63	Chicago Portland Cement Co. 2	Horn, A. C., Co..... 9		Shuart-Fuller Mfg. Co..... 66
American Clay Working Machinery Co. .... 83	Chickamauga Cement Co..... 2			Simpson Cement Mold. Co..... 80
American Gypsum Co..... 79	Chrome Steel Works..... 82	Illinois Cent. Ry..... 17	National Lime & Stone Co... 14	Smith, T. L., Co..... 44
American Process Co..... 18	Cleveland Brick Machinery Co. 61	Independent Powder Co..... 15	National Mortar & Supply Co. 61	Spackman, Henry, Mfg. Co.. 18
American Sandstone Brick Machine Co..... 82	Cleveland Belting & Mch. Co. 60	International Sand-Lime Brick & Mach. Co..... 72	New Jersey Lime Co..... 14	Sturtevant Mill Co..... 11
American Soap Stone Finish Co. .... 14	Clinton Metallic Paint Co... 66	Iowa Hard Plaster Co..... 79	Niagara Gypsum Co..... 78	Superior Portland Cement Co. 43
American Steel and Wire Co.. 10	Clyde Iron Works..... 81	Ironton Portland Cement Co.. 43	Northwestern States P. C. Co. 43	Svenson-Shuman Machine Co. 67
Anchor Concrete Stone Co... 64	Concrete Stone & S. Co..... 81	Johnston & Chapman Co..... 11	Nuttall, R. D., Co..... 17	
Anhydrous Pressed Stone Co.. 9	Continental Car & Equip. Co. 12			Taylor Iron & Steel Co..... 69
Aquabar Co., The..... 9	Cummer & Son Co., F. D... 18-66	Kelley Island Lime & Trans. Co. .... 13	Ohio-Binns Retarder Co..... 75	Union Mining Co..... 1
Ash Grove Lime & P. C. Co.. 8		Kent Machine Co..... 66	Ohio Fibre Machy. Co., The.. 78	United Kansas Port. C. Co... 7
Ashland Fire Brick Co..... 18	Davenport Loco. Works..... 17	Kent Mill Co..... 70	Ohio & Western Lime Co.... 13	United States Gypsum Co.... 76
Atlas Car & Mfg. Co..... 84	De Smet, Geo..... 8	Keystone Traction Drill Co.. 69	Oklahoma Port. Cement Co... 41	United States Silica Co..... 41
Atlas Portland Cement Co... 84	Dexter Portland Cement..... 1	King, J. B., & Co..... 78	Omega Portland Cement Co... 43	Universal Portland Cement Co. 41
Austin Mfg. Co..... 67	Dixie Portland Cement Co... 7	Kosmos Portland Cement Co.. 42	Osborne Eng. Mfg. Co..... 65	Utica Hydraulic Cement Co.. 42
	Duff Patents Co..... 16	Kritzer Company, The..... 5	Ottawa Silica Sand Co..... 1-43	
	Dunning, W. D..... 83			Vulcan Steam Shovel Co.... 71
	Du Pont Powder Co..... 15	Lehigh Car Wheel & Axle Works 69	Peerless Brick Mach. Co..... 80	Wade Iron Sanitary Mfg. Co. 66
Bacon, Earle C..... 66	Empire Gypsum Co..... 78	Lehigh Portland Cement Co.. 2	Pelrice City Lime Co..... 9	Wadsworth, Howland Co.... 9
Barrett Mfg. Co..... 12	Ehram, J. B., & Sons Mfg. Co. .... 74	Lehigh Portland Cement Co.. 2	Penn. Allen Port. Cem. Co... 43	Warner, Charles, Co..... 8
Bartlett, C. O., & Snow Co., The 66	Eureka Stone & Ore Crusher Co. .... 07	Little, C. H., Co..... 65	Pennsylvania Cement Co.... 7	Wiener Co., Ernst..... 83
Berg Mach. Mfg. Co., The.. 72		Louisville Fire Brick Works. 16	Peninsular Port. Cement Co.. 2	Western Lime & Cement Co.. 13
Beaser Mfg. Co..... 67	Farnham Cheshire Lime Co.. 13	McDonnell Boiler & Iron Wks. 73	Perfection Block Mach. Co... 64	West Jersey Bag Co..... 41
Buckbee, J. C., Co..... 2	Farrington, H..... 16	McElroy Post & Pole Co..... 16	Pettyjohn Co., The..... 44	Williams, C. K., & Co..... 18
Buckeye Fire Clay Co..... 16	Foot, J. B., Foundry Co..... 61	Main Belting Co..... 82	Phoenix Cement Co..... 1	Williams Contractors' Supply Co. .... 18
Bucyrus Co., The..... 71	Fowler & Pay..... 12	Marsh, G. C..... 68	Plymouth Gypsum Co., The.. 79	Williams Patent Crusher & Pulverizer Co. .... 68
Burton Powder Co..... 14	French, Samuel H., & Co... 17	Marblehead Lime Co..... 12	Power & Mining Mch. Co... 4	Winant Cooperage Co..... 18
Butterworth & Lowe..... 73	Fuller Eng. Co..... 17	Marquette Cement Mfg. Co... 1	Rader-Gustave Co..... 75	Wolverine Portland Cement Co. .... 2
		Martin, Henry, Brick Mach. Mfg. Co. .... 60	Raymond Bros. Co., The... 70	
Caldwell, H. W., & Sons Co.. 17	Gandy Belting Co., The..... 82	Maryland P. C. Co..... 41	Richardson Scale Co..... 44	
Carolina Portland Cement Co. 1	Goetz, C. W., Lime & Cement Co. .... 12	Maumee Chemical Co..... 44	Ricketson Mineral Paint Wks. 62	
Castalia Portland Cement Co. 7			Ruggles-Coles Eng. Co., N. Y. 18	
			Sackett Plaster Board Co.... 77	
			Sackett Screen & Chute Co., H. B..... 11	

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West Jersey Bag Co., The.

## BAG PATCHER—CEMENT.

Little Co., C. H.

## BALL MILLS.

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Power & Mining Mch. Co.

## BELTING.

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Chicago Belting Co.  
Gandy Belting Co.  
Main Belting Co.

## BRICK.

Harbison-Walker Refractories Co.

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Atlas Car & Mfg. Co.

## BURR STONES.

Charles, J. M.

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Martin-Henry Brick Machine Mfg. Co.  
McElroy Post & Pole Co.  
Peerless Brick Machine Co.

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Fowler & Pav.  
Utica Hydraulic Cement Co.

## CEMENT MCHY.

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Berg Mach. Mfg. Co., Ltd., The.  
Cummer, F. D., & Son Co.  
Kent Mill Co.  
Power & Mining Machy. Co.  
Ruggles-Coles Eng. Co.

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Alpha Portland Cement Co.  
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Atlas Portland Cement Co.  
Carolina Portland Cement Co.  
Castalia Portland Cement Co.  
Chicago Portland Cement Co.  
De Smet, Geo. W.  
Dexter Portland Cement Co.  
Dixie Portland Cement Co.  
French, Samuel H., & Co.  
Goetz, Charles W., Lime & Cement Co.  
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Universal Portland Cement Co.  
United Kansas Portland Cement Co.  
Warner, Chas., Co.  
Western Lime & Cement Co.  
Wolverine Portland Cement Co.

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## CLAYWORKING MCHY.

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Bartlett, C. O., & Snow Co.  
Berg Mach. Mfg. Co., Ltd., The.  
Cummer, F. D., & Son Co.

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Besser Manufacturing Co.  
Century Cement Mch. Co.  
Concrete Stone & Sand Co.  
Foote, J. B., Foundry Co.  
McElroy Post & Pole Co.  
Perfection Block Mch. Co.  
Pettyjohn, The, Co.  
Simpson Cement Mold Co.

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Svenson-Shuman Mach. Co.  
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Ricketson Mineral Paint Works.  
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Caldwell, H. W., & Sons Co.  
Ersham, J. B., & Sons Mfg. Co.  
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Bartlett, C. O., & Snow Co.  
Butterworth & Lowe.  
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Ersham, J. B., & Sons Mfg. Co.  
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Kent Mill Co.  
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DuPont Powder Co.  
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J. C. Buckbee Co.  
Fuller Eng. Co.  
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Carolina P. C. Co.  
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Marblehead Lime Co.  
Mitchell Lime Co.  
National Lime & Stone Co.  
National Mortar & Supply Co.  
New Jersey Lime Co.  
Pierce City Lime Co.  
The Scioto Lime & Stone Co.  
Western Lime & Cement Co.  
Woodville Lime & Cement Co.

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Marblehead Lime Co.  
National Lime and Stone Co.  
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## Red, Brown, Buff and Black

MORTAR  
COLORS

The Strongest and  
Most Economical  
in the Market.



Our Metallic Paints and Mortar Colors are unsurpassed in strength, fineness, and body, durability, covering power and permanency of color. Write for samples and quotations.

## CHATTANOOGA PAINT CO.

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## TWENTY LONG YEARS

of time and weather tried out Ricketson's  
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for Mortar, Brick, Cement, Stone, etc., and proved it to be  
absolutely permanent. Red, Brown, Buff, Purple and Black.

Ricketson Mineral Paint Works  
MILWAUKEE, WISCONSIN

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# Make Concrete Tile and Sewer Pipe

The superiority of Concrete tile over Clay tile has been fully demonstrated

In every state, there is a large field for concrete tile. It can be sold to the farmers for draining their lands. Engineers are specifying concrete tile on sewer and drainage work. It is DURABLE.

In Iowa, concrete tile, laid thirty years ago, is in use to-day, and is as sound as the day it was laid.

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The "Hudson" Sewer Pipe and Tile Molds are Unexcelled for Simplicity, Efficiency and Rapidity.

They make Perfect tile at a minimum cost. They are durable. They will make you money. Give them a trial and be convinced.

## Hudson Manufacturing Company, Hudson, Ind.

OLDEST

### Concrete Roofing Tile Machinery

Manufacturers in United States

Europa and New Era  
Concrete Roofing Tile

Handsome, Sanitary,  
Enduring, Economical

The crowning triumph of mechanical skill and genius

Costs less than any other Roofing Material, presents a much handsomer appearance; outwears all other Roofing.

"THE ROOFING TILE WITH ARCHITECTURAL STYLE"



Europa and New Era Concrete Roofing Tile, Showing Different Size and Form of Tile

Made in practical sizes; all colors; not affected by heat or cold; does not absorb the carbonic acid of the atmosphere; will not radiate heat. Lowers Insurance Rates. *The Manufacturing of Concrete Roofing Tile* is one of the most profitable industries in the country. We Build Roofing Tile Machinery. Information cheerfully furnished. Write for catalogues.

**THE AMERICAN CEMENT ROOFING CO.**

623 Columbus Savings & Trust Building

COLUMBUS, OHIO

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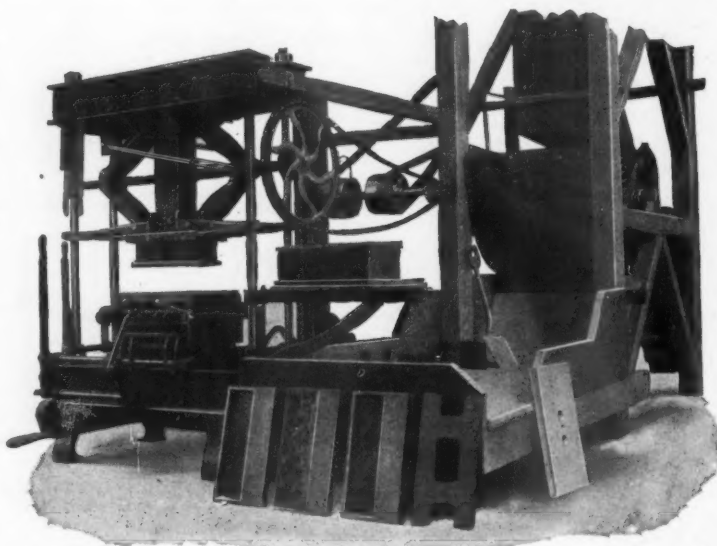
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THE PERFECTION POWER BLOCK MACHINE is the only Power Block Machine on the market, making a Hollow Concrete Building Block under Heavy Pressure and at Great Speed.

Machines have been in constant use since July 1st, 1905, with practically no expense for repairs.

The machine handles sand, gravel, crushed rock, slag and coloring materials perfectly.

All materials accurately measured, thoroughly mixed and uniformly pressed under 200,000 pounds pressure.



Makes 8, 9 and 12x8x24 inch blocks in five faces, and fractional and angle blocks.

Machine can be arranged to make Two Piece and Faced Blocks if desired.

All machines delivered, set up and put in operation to show a guaranteed capacity of 60 blocks (12x8x24 inch) per hour with 5 men.

Blocks perfectly cured in 24 hours in Vapor Curing Kilns of our own design.

Full details, catalog, testimonials, etc., sent upon request

### THE PERFECTION BLOCK MACHINE CO.

KASOTA BUILDING :: MINNEAPOLIS, MINN.

## Anchor Concrete Block Machines

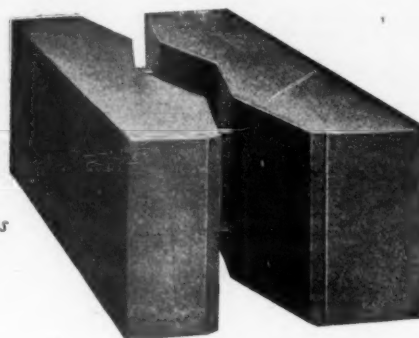


ANCHOR MACHINE IN POSITION TO RECEIVE MIXTURE

Anchor continuous air space blocks guaranteed frost and moisture proof.

Anchor blocks are bound together with firm  $\frac{1}{4}$  in. galvanized iron rods 8 in. long and turned one inch at each end.

All machines sold direct to the trade, saving agents' commissions



Write for catalogue and special prices.

Standard Anchor Machines make blocks that lay in the wall 8 in. by 24 in., any width from 8 in. to 12 in.

Anchor Jr. Machines make blocks that lay in the wall 8 in. by 16 in. and any width from 8 in. to 12 in.

### Anchor Concrete Stone Company

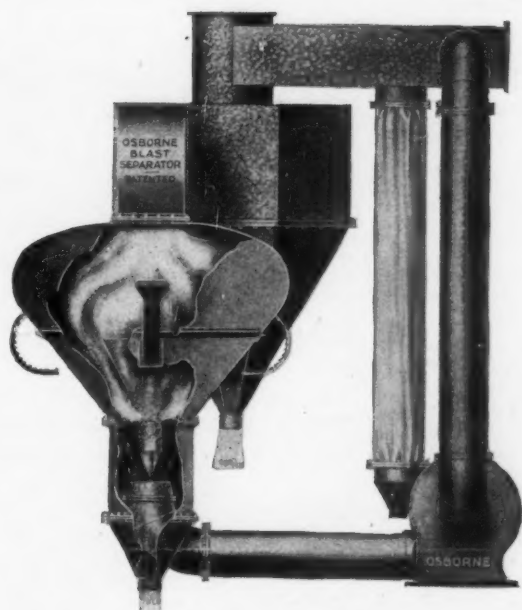
ROCK RAPIDS, IA.

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# STOP LOSING MONEY

In Your Grinding Room



You know it costs money to separate your material after it is ground, so why not use the best means of separation?

We can prove that the

## Osborne Pneumatic Blast Separator

IS THE BEST AND CHEAPEST MACHINE FOR YOU TO USE.

It will give you larger capacities for less horse power than any other machine on the market. Will separate your material to 200 mesh fine.

Capacities, from 3½ to 10 tons per hour of finished product 95% 100 mesh fine.

**STOPS ALL FLOATING DUST IN YOUR GRINDING ROOM.**

Circular "A" Tells You More About It.

**Osborne Engineering - Manufacturing Company**

141 BROADWAY, :: NEW YORK.



THE OLD WAY

# A TEN TO ONE SHOT



THE NEW WAY

You can mend TEN bags with

## Little's Sac Patching Sement

in the time it takes to sew ONE.

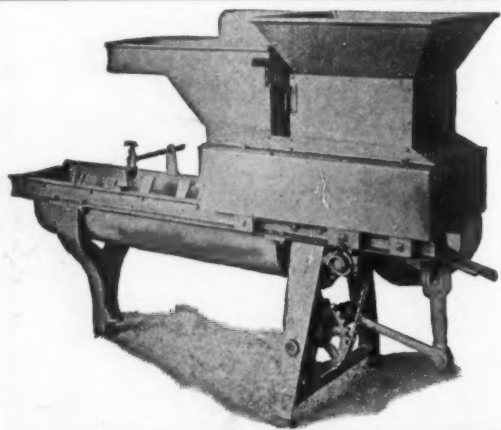
Time of mending and money saved. Isn't that economy?

Write for further particulars.

**C. H. LITTLE COMPANY**

**Detroit, Mich.**

Tell 'em you saw it in ROCK PRODUCTS.



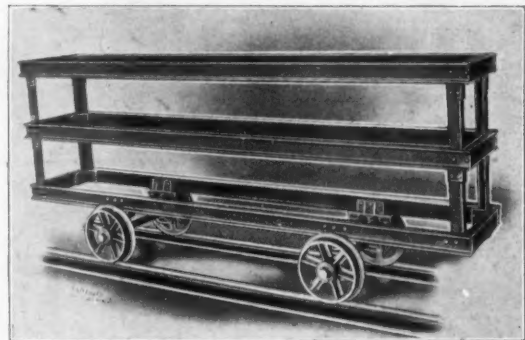
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"The Mixer that measures  
and Mixes"

"You fill the Hopper, the  
Mixer does the rest"

Simple, reliable, economical, durable  
and moderate in price

Write for Catalogue and Prices to  
**The Kent Machine Co.**  
306 N. Water St., Kent, O.



The "KENT" Block Cars, Transfer Cars, etc.

**THE C. O. BARTLETT & SNOW CO. CLEVELAND, OHIO, U.S.A.**  
MANUFACTURERS OF

**Crushers, Graders, Elevators**  
**Drop Forge Steel Chain**  
**Malleable and Steel Buckets**

DRYERS—the largest assortment in the world.

GYPSUM MACHINERY, PLASTER MACHINERY,  
SELF-DUMPING CAR HAULS,  
SAND AND BRICK DRYERS AND CONVEYORS.

Our motto is

**"The Best and Always the Best."**



**Wade Iron Sanitary Mfg. Co.**

MANUFACTURER OF

Wade Back Water Gate Valves, Clean-Out House  
Drainage Fittings, Iron Catch Basins and Cast  
Iron Covers, Etc.

Send for Catalogue.

Long Distance Phone 6713.

43 E. Harrison Street, CHICAGO, ILLS.

**CLINTON METALLIC PAINT CO.**  
CLINTON, N. Y.

LARGEST AND OLDEST MANUFACTURERS OF

**BRICK AND MORTAR COLORING**

Be sure you get the genuine with the "Little Yellow Side-Label"  
on each package.

Let us tell you about Side-Walk Black.

Flint Pebbles and Buhr Stone  
Linings.

French Buhr Mill Stones,  
Solids and Built.

**J. M. Charles,**  
Sole Agent.

59 Pearl St., NEW YORK, N. Y.

Bolting Cloths, Dufour Swiss  
Silk, Fine Wire Cloth.

Mixing and Sifting  
Machinery.

**CUMMER CONTINUOUS PROCESS**

FOR

NO KETTLES  
USED

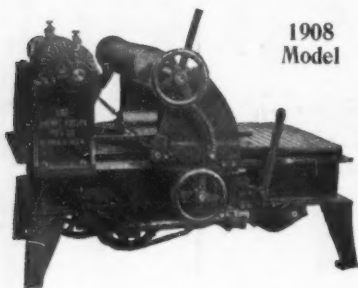
**CALCINING  
GYPSUM**

PLANTS IN  
OPERATION

Great Saving in Cost of Manufacture and Quality of  
Product Guaranteed.

The F. D. CUMMER & SON CO., Cleveland, O.

## The Shuart-Fuller Improved Fiber Machine



1908  
Model

Has an automatic, proportional, increasing feed, which keeps grade of fiber uniform from start to finish, and holds machine to highest possible rate of production for the grade of fiber and number of saws. Does not begin with fiber and end with dust, nor fall off in rate of production on each log, from 40 to 80 per cent as do the ordinary non-increasing feed machines. Works logs up to 24x24 inches. No royalty string attached to sale. Pay no attention to misrepresentations of our competitors, but write for descriptive circular and terms to

**The Shuart-Fuller Mfg. Co.**  
ELYRIA, OHIO

St. Louis, June 17, 1907.

THE SHUART-FULLER CO., Elyria, Ohio.  
Gentlemen:—We are just in receipt of advice from our New Mexico plant wherein they state that the Wood Fiber Machine recently shipped by you is doing all that we have asked of it and running very fine

ACME CEMENT PLASTER CO

By Jas. R. Dougan, Sec

**FARREL ORE AND  
ROCK**

**CRUSHER**

USED IN ALL PARTS OF THE WORLD—LARGE  
RECEIVING CAPACITY—SPECIALLY DESIGNED  
AND CONSTRUCTED FOR HARDEST KIND OF WORK  
**COMPLETE CRUSHING PLANTS OUR SPECIALTY**

• SEND FOR CATALOGUE •

**EARLE C. BACON, ENGINEER.**

FARREL FOUNDRY & MACHINE CO. HAVEMEYER BUILDING, NEW YORK

Tell 'em you saw it in ROCK PRODUCTS





## AUSTIN GYRATORY CRUSHER

The World's leading rock and ore breaker.

The only self lubricating Crusher.

The only Crusher having double countershaft bearing.

Simple construction, correct design.

Thousands in use.

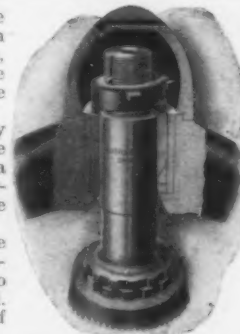
Plans and specifications furnished for any sized plant.

Send for Catalogue No. 17.

All experienced users recognize that the efficiency and durability of the suspension bearing as applied to Gyratory Crushers, depends upon locating the bearing at the point of least gyration or movement of the main shaft.

A perfect suspension can be made only by locating the bearing at the point where there is no movement of the shaft. That being a mechanical impossibility it follows that superiority is obtained in fixing the bearing at the point of least gyration of the shaft.

As the accompanying cut will show, the movement of the shaft at the point of suspension in the Austin Crusher is reduced to the minimum and practically eliminated. Consequently the highest possible degree of efficiency and durability is obtained.



Austin Manufacturing Co., Chicago,

New York City Office  
1682 FULTON BUILDING  
Hudson Terminal



Style No. 1, 7x8 Jaw Opening, 4 Horse-power.

## Our Crushers Are Startling the World

This illustration shows the exact product, numbered from 1 to 8, that our CRUSHERS produce. Would you not be interested in a crusher if we guarantee to produce from 10 to 20 tons in ten hours with this little No. 1 machine, from 3 to 4-inch material at one operation? We have sold over 200 of these machines in the past year, and they are doing just this very kind of work. We manufacture twenty different-sized crushers.

Eureka Stone & Ore Crusher Company

(Successors to the Universal Stone Crusher Company)

Box 591, Cedar Rapids, Iowa

## "The Svenson is Easily the Simplest and Fastest Mixer Ever Built"

Quit wasting money and making bad concrete with that "batch" machine. Don't fuss and lose time with complicated mixers. Let us tell you about this simple, strong machine.

### The Svenson Concrete Mixer

Has only five moving parts, all on one shaft. It keeps going and it keeps the men going.

We want to tell you our ideas on proper mixing, for the "Svenson" mixes dry, then wet—the only scientific way. And it proportions the mix positively, just the way you set it.

Send for Catalogue.

Svenson-Shuman Machine Co.,

602 Bessemer Bldg., PITTSBURGH, PA.



## A \$500 MIXER FOR \$350.

### The Besser Improved Paddle Mixer

Measures exactly any and all kinds of material, either wet or dry, and mixes them perfectly. It has no gears, springs or cogs, and but one sprocket chain. Proportions and capacities are changed outside of the hoppers, and instantly. Does away with expensive delays and breakdowns. Pivot bearings. Steel construction. Unbreakable. Bearings removed from dirt. The most simple and dependable proportioning mixer on the market. Sold on trial. With various equipment. For all kinds of work at PRICES FROM \$175.00 UP.

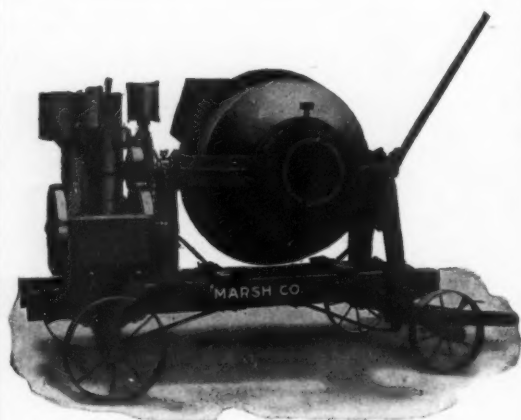
We make the most COMPLETE LINE OF CONCRETE MACHINERY, and call your special attention to our POWER AND HAND CEMENT DRAIN AND SEWER TILE MACHINES. They are money makers.

Also Besser Block and Brick Machines, Fence Post and Ornamental Molds, Monolithic Sewer and Culvert Forms. The Besser \$95.00 Hand Batch Mixer should be in every small block plant. Send for free literature and 25 cents for large Catalogue and Instruction Book.



THE BESSER MANUFACTURING CO., 110 Ninth St., Alpena, Mich.

Tell 'em you saw it in ROCK PRODUCTS



Furnished with any combination of power and mounting, chain or gear connection at option.

## Marsh-Dexter Mixer

We claim a lot for this machine.  
If our claims are true you want to know it.

If you will write us we will tell you how to find out.

## Marsh Company

903 Old Colony Building  
CHICAGO

## RAW MATERIAL GRINDERS

### New Williams Universal



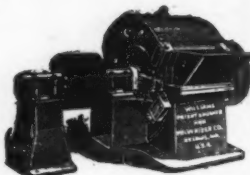
FOR TUBE MILL FEED  
800 BARRELS 22 HOURS  
95 PER CENT THROUGH 20 MESH  
HORSE POWER 40 TO 50

WE ALSO GRIND  
GYPSUM, LIME, COAL AND SHALE

### Vulcanite Grinder

FOR ROLLER MILL FEED  
TAKES MATERIAL FROM  
GYRATORY, DIRECT

CAPACITY 20 TONS HOUR  
FINENESS  $\frac{1}{4}$  IN.,  $\frac{1}{2}$  IN. AND  $\frac{3}{4}$  IN.  
HORSE POWER 40 TO 45  
1,300 MILLS NOW IN USE



WRITE FOR BULLETIN NO. 12

WORKS:  
ST. LOUIS, MO.

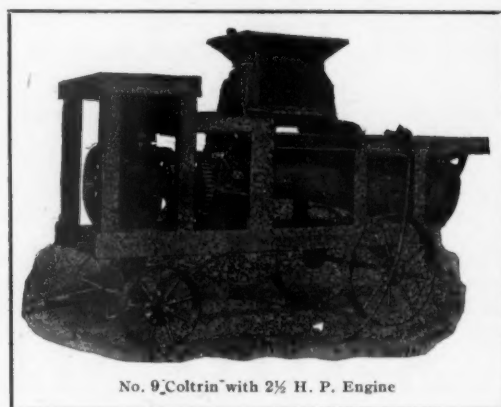
The

Williams Pat. Crusher & Pulverizer Co.

San Francisco Offices: 428 Monadnock Building

SALES OFFICE:  
OLD COLONY BLDG.  
CHICAGO

## Coltrin Concrete Mixers



No. 9 Coltrin with 2½ H. P. Engine

THE GAMER COMPANY, INC.  
HEATING AND PLUMBERS' SUPPLIES  
TANK AND TANK TOWERS  
GAMER WIND MILLS

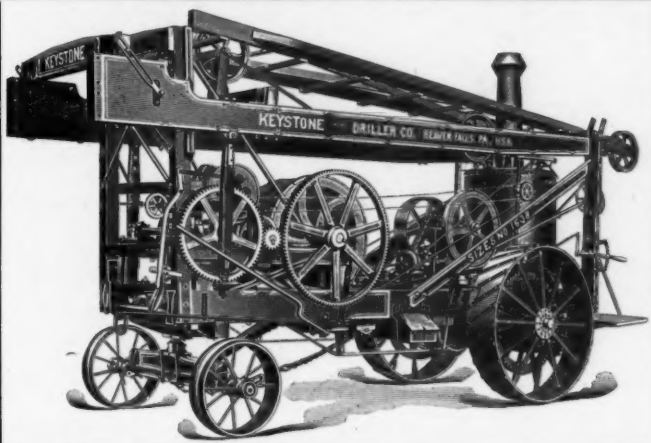
Ft. Worth, Texas, December 14, 1908.  
DEAR SIR: Replying to your letter of inquiry, we are glad to say the work of your No. 6 Coltrin Mixer which was placed in our building is doing everything that you claimed for it, both in regard to speed and quality of mix.  
Yours very truly,  
THE GAMER COMPANY,  
Chas. Gamer, President.

WE SHIP THE COLTRIN MIXERS ON APPROVAL, ALSO P. B. MILES LATEST BLOCK MACHINE, THE OLIVER AUTOMATIC, AND A FULL LINE OF CONCRETE MACHINERY.

**N.J. Morehouse**  
Waterloo, Iowa.



## KEYSTONE CHURN DRILLS FOR HEAVY BLAST HOLES



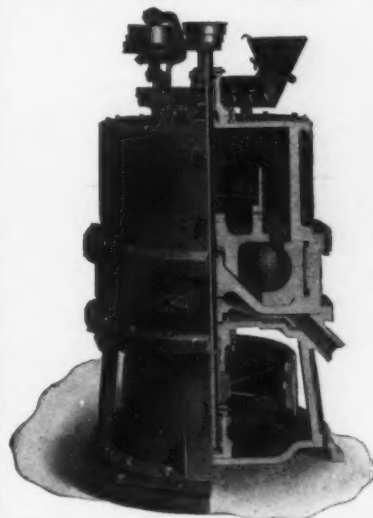
IN CEMENT and STONE QUARRIES, where large and deep blast holes can be used to advantage, these machines form the cheapest and quickest means of sinking 6 inch holes.

Penetrate any formations, any depth, 30 or 300 feet. Self-moving or portable, if desired.

Ask for Catalog No. 4.

**KEYSTONE TRACTION DRILL CO.**  
Monadnock Bldg., BEAVER FALLS, PA., CARTHAGE, MISSOURI.  
CHICAGO. 170 Broadway, NEW YORK.

## The Fuller-Lehigh Pulverizer Mill



Cement Companies equipped with Fuller Mills advertise the fact that the consumer gets 38 pounds more of the IMPALPABLE POWDER or REAL CEMENT in every barrel of cement produced by The Fuller Mill than by any other

### Produces Commercially

Cement having a higher percentage of Impalpable Powder than can be obtained by any other mill. Tests show that the tensile strength of a one-fourth mortar made with cement pulverized by the Fuller Mill is higher than the tensile strength of a one-third mortar made with cement pulverized to the fineness required by the Standard Specifications.

### Lehigh Car, Wheel & Axle Works

Main Office: CATASAUQUA, PA.

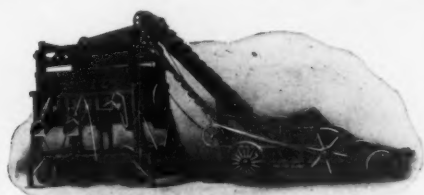
New York, N. Y.

Kansas City, Mo.

Hamburg, Germany, Alsterdamm 7.

## BUILT FOR BUSINESS

## Champion Steel Rock Crushers



The Champion Portable Crushing Plant

Will make money for users because they will do more work at less cost for repairs than any other machines. Built in five sizes, from 75 to 300 tons daily capacity.

Complete Crushing Plants, including Elevators, Screens, Conveyors, Engines and Boilers, designed and installed.

Catalogue costs nothing. A large calendar free to those who mention this paper.

Address

**The Good Roads Machinery Co.**  
KENNETT SQUARE, PA.

### Economy Demands

## TISCO MANGANESE STEEL LINK BELTING

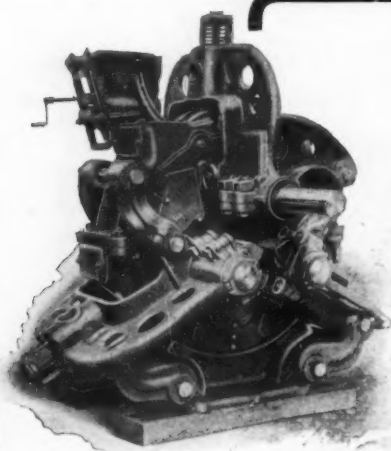
¶ If you are handling gritty materials in elevators or conveyors you should investigate TISCO MANGANESE CHAIN. Its hardness and toughness make it the ideal chain for handling gritty substances. It wears 10 times as long as malleable chain, which alone is merit enough!

¶ TISCO MANGANESE STEEL chain is made in all the standard sizes, with or without attachments. Special chain to meet your requirements.

¶ An inquiry may help us to help you.

### CATALOG?

**Taylor Iron & Steel Co.** High Bridge  
New Jersey



# MAXECON

MEANS

## MAXimum of ECONomy

Years of experience with the assistance of our hundreds of customers has found THE SOLUTION OF GRINDING HARD MATERIALS. The MAXECON PULVERIZER combines highest EFFICIENCY, greatest DURABILITY and assured RELIABILITY. Uses the LEAST HORSE POWER per capacity. Embodies the features of our Kent Mill with improvements that make it MAXECON.

**WE DO NOT CLAIM ALL of the CREDIT for this achievement**

We have enjoyed the valuable suggestions of the engineers of the Universal Portland Cement Co. (U. S. Steel Corp) Sandusky P. C. Co., Chicago Portland C. Co., Marquette Cement Mfg. Co., Western P. C. Co., W. H. Harding, Prest., Coplay P. C. Co., Cowham Engineering Co., Ironton P. C. Co., Alpena P. C. Co., Castalia P. C. Co., Pennsylvania P. C. Co., and many other patrons.

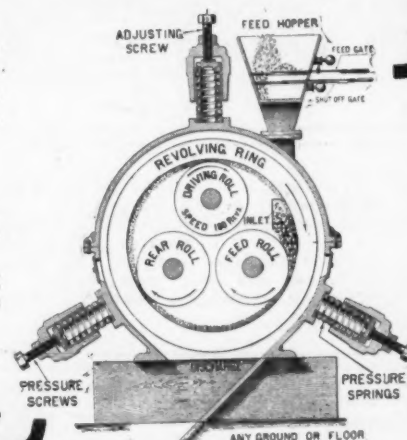
## THE RING WOBBLER

The FREE WOBBLING POUNDING RING instantly and automatically ADAPTS its position to the variations of work.

Its GRINDING ACTION is DIFFERENT than any other; besides the STRAIGHT rolling action of the rolls, the SIDE to SIDE motion of the ring makes the material subject to TWO crushing forces and DOUBLE OUTPUT results.

# KENT MILL CO.

170 BROADWAY, NEW YORK  
LONDON, W. C., 31 HIGH HOLBORN  
BERLIN, N. W. C. SCHIFFBAUERDAMM 29



## For Grinding Limestone

**We Guarantee that**

### One Raymond Mill with Air Separator

will deliver at point of storage

**3½ Tons per hour---98%, 200 mesh.**

Think what that means. Compare it with the capacity of other mills.

The nearest approach to this capacity that we find claimed by other mills is

**2½ Tons per hour.**

and that is merely for the actual grinding in the mill. It does not include separating or delivery of the finished product to point of storage, which must be accomplished by additional expensive machinery which is entirely eliminated in the Raymond System. The Raymond System does it all.

Furthermore, 3½ tons per hour is our conservative guarantee. As a matter of fact, where the material is favorable, the Raymond System can deliver and is actually delivering, a finished product at the rate of

**6½ Tons per hour---92%, 200 mesh.**

We can demonstrate to any cement manufacturer that he is losing money if he is not using the Raymond System for grinding his raw material and coal.

This is a big statement and we make it with a full realization of its gravity and importance to the Cement Industry. We can "make good" on this statement.

Do you want us to "show you?"

## Raymond Brothers Impact Pulverizer Co.

141 Laflin Street, Chicago

Tell 'em you saw it in ROCK PRODUCTS.





# Vulcan

## Steam and Electric Shovels

For all classes of quarry work.

If you are operating a quarry or cement plant, you can't afford to be without a **Vulcan Shovel**, because they will **load blasted rock at from 2 to 4c per ton.** They are fully improved, built of only the best material obtainable, and are guaranteed to stand up to the work and deliver the goods. Traction wheels or trucks. Steam or electric power.

**Giant Boom Shovels**, six sizes, 45 to 120 tons,  $1\frac{1}{2}$  to 5 cubic yard dippers.

**Little Giant Shovels**, two sizes, 30 to 32 tons,  $1\frac{1}{4}$  cubic yard dipper.

**Revolving Shovels**, three sizes, 15 to 35 tons,  $\frac{1}{2}$  to  $1\frac{1}{2}$  cubic yard dippers.

Full information on request, write today for booklets.

**The Vulcan Steam Shovel Co., 129 Vulcan Place, Toledo, O.**



95-C IN SANDUSKY PORTLAND CEMENT COMPANY'S QUARRY.

**Bucyrus Shovels Are Loading Crushed Stone and Digging Blasted or Unblasted Cement Rock in the Leading Quarries in the United States.**

## THE BUCYRUS CO.

Branch Offices:  
NEW YORK  
SAN FRANCISCO

Main Office & Works:  
South Milwaukee, Wis.

1869

1909

## Our Fortieth Anniversary

Which means that we are offering with our machines, Gratis to the Trade, the experience gathered in these  
**FORTY YEARS**

*A machine handled without experience  
Is like an animal without a guide.*

### J. R. ALSING ENGINEERING CO.

R. F. Abbe, Pres't.

136 LIBERTY STREET :: NEW YORK

Tell 'em you saw it in ROCK PRODUCTS.

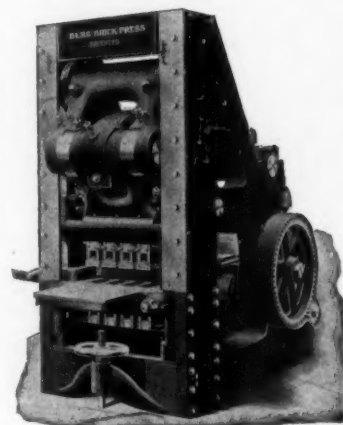
The "Berg Press" is the Highest Development in the Art of Brick Making Machinery, so Pronounced by the United States Government

Highest Grade  
**BRICK MACHINERY**  
 and Equipment

FOR  
 SAND-LIME, SAND-CEMENT  
 FIRE-BRICK, CLAY and SHALE

Each system we guarantee are unequaled and further advanced than any others

**Cement Machinery  
 Mining Machinery  
 Engines and Boilers**



BF<sup>2</sup>G FOUR MOLD PRESS.  
 Highest Efficiency Guaranteed.

**The Berg Machinery Manufacturing Co., Ltd.**  
 Toronto, Ont., Canada

## Imitation Is the Sincerest Flattery

Since it has been proved that our Patented Method for mixing sand and lime for the manufacture of brick or stone, commonly known and named by us the

### "Division Method"

is a success, and the only way of producing a high grade brick or stone of real merit at a low cost, others are offering to install a

### "Division Method" or a "Division System"

AS SOME CALL IT

Although we fully appreciate the high compliment paid us by such attempts to imitate our process

### WE DESIRE TO WARN INVESTORS

that such imitation or "just as good" methods are failures, because "they do not deliver the goods". Moreover, any successful imitation would be an infringement on our process which is fully covered and protected by Letters Patent in the United States and all foreign countries. We will protect our patents and prosecute infringements.

We erect and equip up-to-date factories completely, furnishing machinery of special design for our use and operated under our Patented

### "Division Method"

producing the highest grade brick or stone possible to make at less cost than can be produced by any other system or machinery.

Correspondence Solicited.

## International Sand Lime Brick & Machinery Company

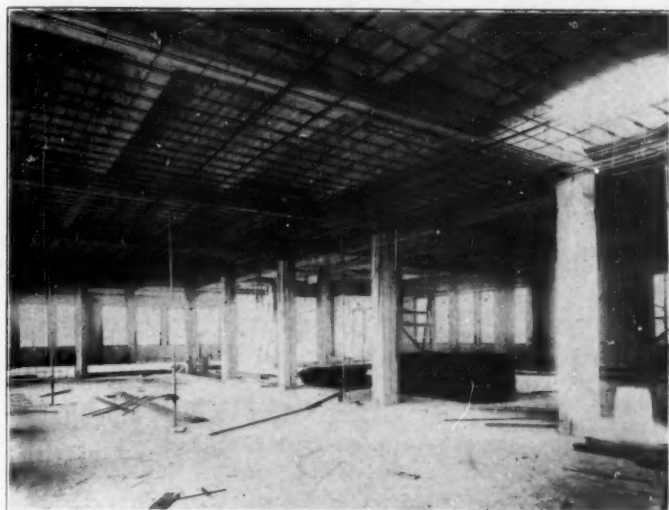
Engineers and Contractors for Silicate Brick Factories

90 West St., - - - New York, N. Y.

Tell 'em you saw it in ROCK PRODUCTS



## Slotted Steel Studding



Suspended Ceiling, Berkeley, (Cal). Polytechnic School

Fireproof Partitions, Furrings, Suspended Ceilings.  
Light, Rigid, Strong, Economical. Over 3,000,000 feet used in San Francisco,  
the past year. Write for descriptive pamphlet.

## Parker Steel Corner Bead

The Protector of Plastered Corners. Is Used  
by all the Leading Plasterers.

Hot Galvanized;  
therefore  
will not rust.

Takes the place  
of wood trim  
around windows.



Straight and true  
as a die and  
puts plumb lines  
out of business.

Makes a fireproof,  
sanitary corner  
at trifling expense.

No Thin or Feather Edge of Plaster to Crack or Break  
Off With This Bead.

Stock Lengths of Six, Seven, Eight, Nine and Ten Feet.

MANUFACTURED BY

## Sharon Steel Hoop Company

CHICAGO OFFICE: Commercial National Bank Bldg.

N. Y. OFFICE: Fuller Bros. & Co., 139 Greenwich St.

GET THE BEST

# Finest Line of Gypsum Machinery

MADE

## KETTLE CRUSHER NIPPERS

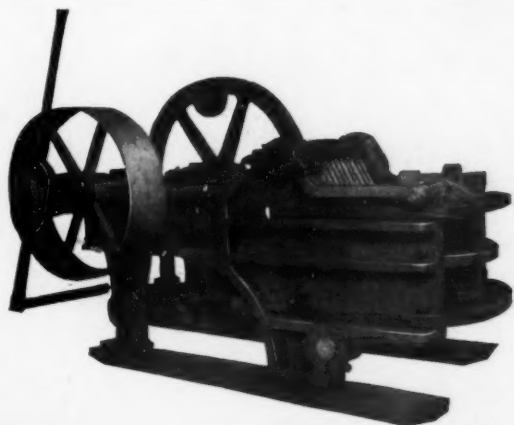
ASK FOR CATALOG OF

## MOGUL NIPPERS. OPEN DOOR POT CRUSHERS

Best Mills in the United States Have Them

**McDONNELL BOILER & IRON WORKS, Des Moines, Iowa, U. S. A.**

"Formerly Des Moines Mfg. & Supply Co."



## CRUSHERS

for soft rocks, burnt lime, etc.

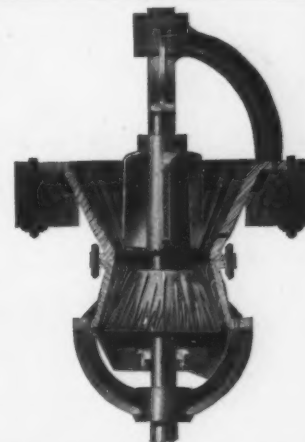
## GYPSUM MACHINERY

We design modern Plaster Mills and  
make all necessary Machinery, including  
Kettles, Nippers, Crackers, Buhrs,  
Screens, Elevators, Shafting, etc.

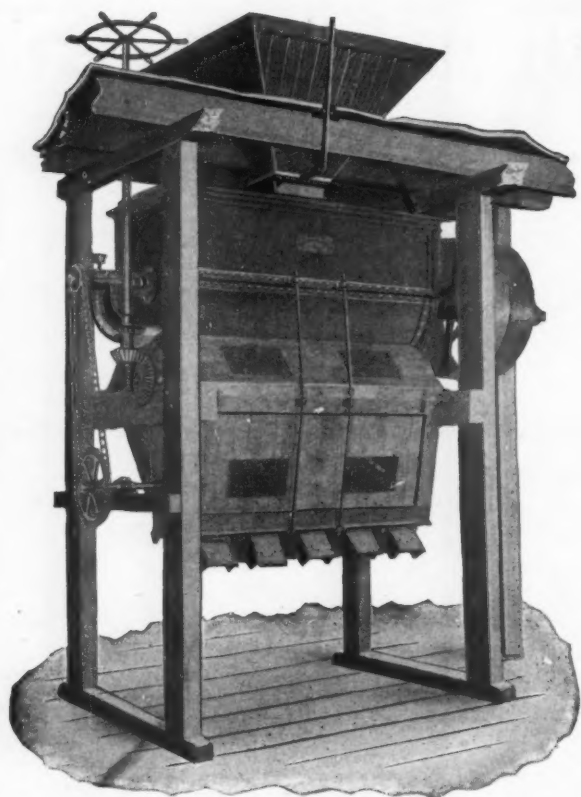
SPECIAL CRUSHER-GRINDERS FOR LIME  
HYDRATORS

## BUTTERWORTH & LOWE

17 Huron Street, GRAND RAPIDS, MICH.



Tell 'em you saw it in ROCK PRODUCTS.



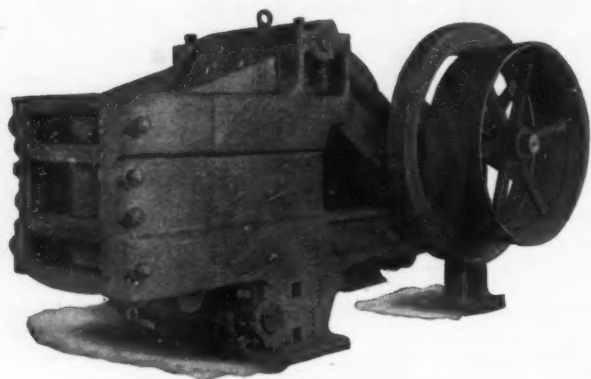
# ENTERPRISE PLASTER MIXER

NOISELESS,  
DURABLE and EFFICIENT.

For Mixing Hair Fibre, Wood Fibre and  
Retarder with Dry Plastering  
Materials.

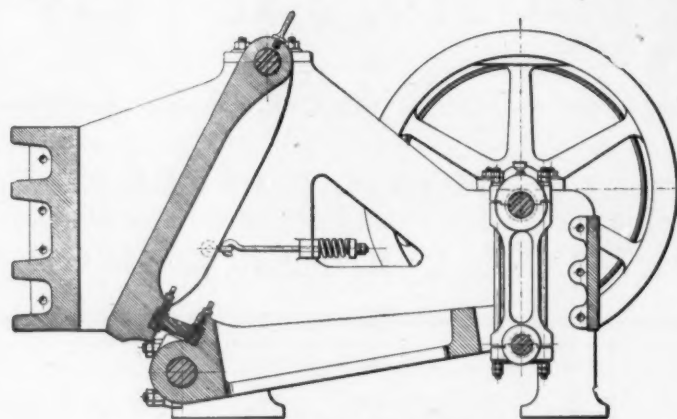
## Calcining Kettles

Jaw and Rotary Crushers for Gypsum, Reels,  
Vibratory Screens, Hair Pickers and Trans-  
mission for applying power.



EHRSAM NO. 4 JAW CRUSHER.

This machine will handle large chunks and reduce from 30 to 40 tons  
of Gypsum per hour to 2½-inch maximum or smaller if wanted.



NO. 4 JAW CRUSHER, SHOWING SECTIONAL VIEW OF NIPPER  
The jaw opening at inlet is 18x28 inches.

## The J. B. Ehrsam & Sons Mfg. Co.,

BUILDERS OF

### COMPLETE EQUIPMENTS FOR PLASTER MILLS

### Enterprise, Kansas

Tell 'em you saw it in ROCK PRODUCTS



# BUILDERS' SUPPLY DEALERS CAN MAKE TWO PROFITS!



## Both Manufacture and Sell Rader Patented Plaster Board

If you are selling plaster boards you are making one profit. Why not manufacture them and make both manufacturers' and dealers' profits? With

### RADER'S PATENTED MOULDING TABLES

you can manufacture the best plaster boards on the market and at less cost than the largest manufacturers, enabling you to compete with any brand, both in quality and price.

### PLASTER BOARDS

are rapidly displacing all kinds of lath, being fire and vermin proof, lower in price, more rapid and economical in construction, stronger and more durable.

### RADER'S PATENTED PLASTER BOARDS

made only with Rader's Patented Moulding Tables are the most satisfactory now on the market. Cannot be broken as can others, thereby eliminating

all risk of loss by breakage in transportation or general rough handling. They have to be sawed in two. Each side of the board is adapted to different purposes thus having a double advantage over any other make. Three plants are now in operation to meet a growing demand.

A COMPLETE PLANT CAN BE INSTALLED AT A SMALL COST as the Rader apparatus is licensed at a very low price and only a very small space is required for its operation. The device makes boards from  $\frac{1}{4}$  to 1 inch in thickness.

### TERRITORY AND RIGHTS CAN BE LICENSED

with the exception of the New England and Middle Atlantic states which have already been secured by one of the largest plaster manufacturing companies in the East.

Write us for Samples and Further Information.

**GUSTAVE RADER CO.** 1105 Metropolitan Ave. **BROOKLYN, N. Y.**

# RETARDER Wood Fiber

**THE OHIO and BINNS RETARDER CO.**  
PORT CLINTON, OHIO

**Reliable Stucco Retarder=Strong=Uniform in Strength=**  
Duplicate power plant (electric and steam power) installed so as to preclude any possibility of shut down and consequent shut down of mixers who depend upon us for their supply of Retarder. We have a capacity large enough to supply every retarder user in the U. S. and Canada, and some to spare for Europe. Our mills are fireproof in every particular. Write us for prices and information.

**THE OHIO and BINNS RETARDER CO.**  
PORT CLINTON, OHIO



## JOIN THE MARCH OF PROGRESS

¶ There they go, a solid phalanx of wide-awake dealers—shrewd, level-headed business men—marching to the quick-step of **Progress** and flaunting the present-day material dealer's creed—

**PLASTER BOARD** *instead of inflammable wood lath.*  
**GYPSINITE** *instead of inflammable wood studding.*

¶ Dealers all over the country are falling in line—vast quantities are being sold—**big profits** are being made.

**FIREPROOF PLASTER BOARD** can't burn; confines fire to one room; sound-proof—makes "dead wall"; **economical**; saves labor cost and time in erecting; many superior advantages; **a great selling success.**

**FIREPROOF GYPSINITE** replaces wood studding; composed of two well-seasoned, straight-grained nailing strips imbedded in Gypsinite Concrete: **nail right into it**; facilitates application of the trim; insures perfect plastering surface and plaster economy.

¶ What the makers are advertising broadcast, what the architects are specifying, what the building public is demanding, what other material dealers are having great success with—that's the line of least resistance and biggest profits—that's the line that leads direct to building material headquarters— —

## UNITED STATES GYPSUM COMPANY

Address Our Nearest Office

**NEW YORK**  
**CHICAGO**

**MINNEAPOLIS**

**CLEVELAND**  
**SAN FRANCISCO**

Tell 'em you saw it in **ROCK PRODUCTS**



# SACKETT-PLASTER-BOARD

## FIRE PROOFING

Instead of  
Lath

Time  
Saving

Labor  
Saving

Money  
Saving

The board  
that made  
plaster  
boards  
famous

First used  
in 1891  
Perfected  
in 1908

### SACKETT PLASTER BOARD CO.

BATTERY PLACE  
NEW YORK

UNITED STATES GYPSUM CO.  
CLEVELAND,  
CHICAGO,  
MINNEAPOLIS.

GRAND RAPIDS  
PLASTER CO.  
GRAND RAPIDS  
MICH.

Tell 'em you saw it in ROCK PRODUCTS.

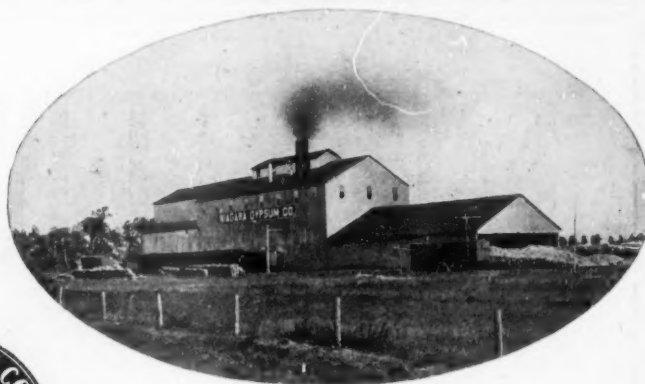
# NIAGARA GYPSUM CO.

MANUFACTURERS OF

## GYPSUM PRODUCTS

**MINES and MILLS      GENERAL OFFICES**  
Oakfield, N. Y.                      Buffalo, N. Y.

Our electrically equipped mines and mills are now in operation with a capacity of 300 tons per day, and we assure you of prompt service.



We Manufacture Stucco,  
Neat Cement Plaster, Ready  
Finish, Wood Fibre Plaster, Fin-  
ishing Plaster, Sanded Wall Plaster,  
Crushed Rock, Land Plaster.

## SPECIAL MACHINERY AND FORMULAS

FOR THE MANUFACTURE OF

**WOOD FIBRE PLASTER, FIRE PROOFING  
AND KINDRED PRODUCTS**

We furnish the latest improved FIBRE MACHINE, (fully patented) also FORMULAS, on a reasonable proposition. The strongest companies and oldest manufacturers are operating under my contracts.

WRITE FOR TERRITORY

**The Ohio Fibre Machinery Co.**

**J. W. VOGLESONG,**  
GENERAL MANAGER

**Elyria, Ohio**

## KING'S WINDSOR CEMENT FOR PLASTERING WALLS AND CEILINGS

Elastic in its nature, can be applied with 25 per cent less labor and has 12½ per cent more covering capacity than any other similar material

Buffalo Branch, CHAS. C. CALKINS, Manager  
322 W. Genesee Street

**J.B. KING & CO., No. 1 Broadway, New York**

## WALL PLASTER OF FINENESS

MEANS

## WALL OF QUALITY

## FINENESS ASSURES BULK, CAPACITY, STRENGTH

Our Air Separating System produces the Wall Plaster of Fineness — The Mechanic from Our Brands the Wall of Quality.

**Empire Gypsum Co.,                      Garbutt, N. Y.**

Mines, Mill, Office, GARBUTT, N. Y.

Tell 'em you saw it in ROCK PRODUCTS.



**Does Quality Appeal to You?**  
**Does Prompt Service Appeal to You?**  
**Does Reliability Appeal to You?**

Then Buy

**Your Stucco and  
 Wall Plasters of  
 The  
 AMERICAN GYPSUM CO.  
 PORT CLINTON, OHIO**

Quality

Strength

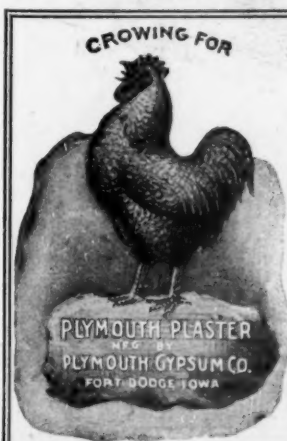
Reliability

**Plaster! Plaster!**

**Iowa Hard Plaster Co.**

HARD BY NAME. HARD BY NATURE.  
 HARD TO BEAT. NOT HARD TO GET.

**Iowa Hard Plaster Co.** FT. DODGE  
 IOWA....



**PLYMOUTH H  
 CEMENT  
 AND  
 WOOD FIBER  
 PLASTER**

The Brand that's Made from Pure  
 Gypsum Rock.

WRITE US FOR PRICES AND  
 ADVERTISING MATTER.

**Plymouth Gypsum Co.**  
 Fort Dodge, Iowa

**Stucco  
 Retarder**

Strong  
 Uniform  
 Fine Ground

**RETARDER**

We are the oldest Retarder firm  
 in the United States, and above  
 is our motto. New fire-proof  
 plant and prompt service.

FREE SAMPLE ON REQUEST

**Chemical Stucco Retarder Co.**  
 WEBSTER CITY, IOWA.  
 INCORPORATED 1895

Tell 'em you saw it in ROCK PRODUCTS.

# HERCULES BLOCK MACHINES

ARE THE FASTEST, SIMPLEST,  
STRONGEST AND

## BEST MACHINES BUILT

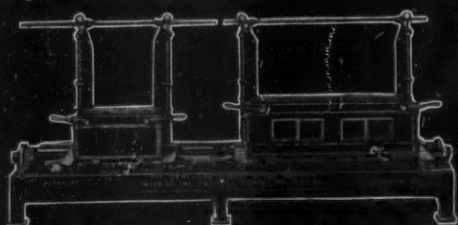
AND WE CAN PROVE IT

THEY EXPAND TO MEET EVERY DEMAND

THE ONLY machine making any size of stone from a 3 inch block to a 6 foot water table.

THE ONLY face down machine that allows for a really coarse WET mixture with fine facing.

THE ONLY machine on which four 16 inch stone can be made at ONE time, or two 20 inch, 24 inch or 32 inch stone at one time.



THE HERCULES IS AN OLD  
ESTABLISHED MACHINE

Built along Correct Lines and Endorsed by the Leading Contractors and Builders. They are used in all parts of the world.

They  
make the  
kind of blocks  
that sell.

"Hercules"

Blocks,

The kind

the trade

demand.

Send for

Catalogue.

Century  
Cement  
Machine  
Company

288-298 St. Paul St.  
Rochester N. Y.

## OUR NEW Baluster Mold



From Simpson Mold No. 66  
Height 18 1/2 in.  
6 in. Square at Base

Was first shown at the Chicago Show in February. It created such a favorable impression that a large number of the molds were ordered on sight.

The Price is  
**Eight Dollars**

If you have no copy of our Concrete Porch Book, showing our great line of molds for ornamental work, send for it. If you are a block or brick maker, contractor or cement worker send your business card or letter-head and we will send the book free, otherwise send 10 cents.

The Simpson Cement Mold Co.  
498 N. High Street Columbus, O.

## The Improved Peerless One-Man Cement Brick Machine

Equipped with new tamping device, which tamps ten bricks in the machine at one operation, making 12,000 perfectly formed bricks in ten hours.



The superiority of the Peerless Brick Machine was demonstrated conclusively at all of the recent conventions.

It is the greatest invention in the industry. Simple, strong and durable. Combines all the advantages of every other machine at the smallest cost.

The most successful and most easily operated one-man brick machine ever made.

Write at once for particulars.

Peerless Brick Machine Co.  
15 NORTH SIXTH STREET MINNEAPOLIS, MINN.

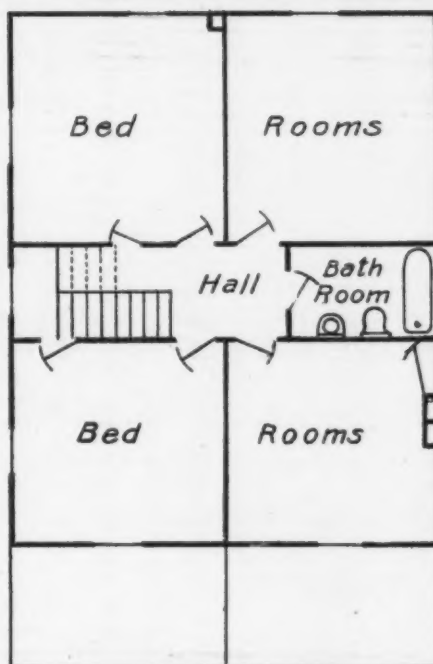
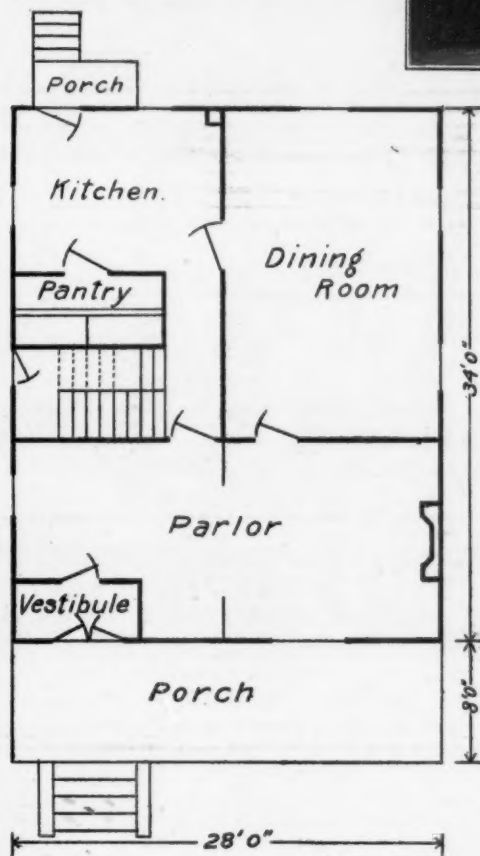
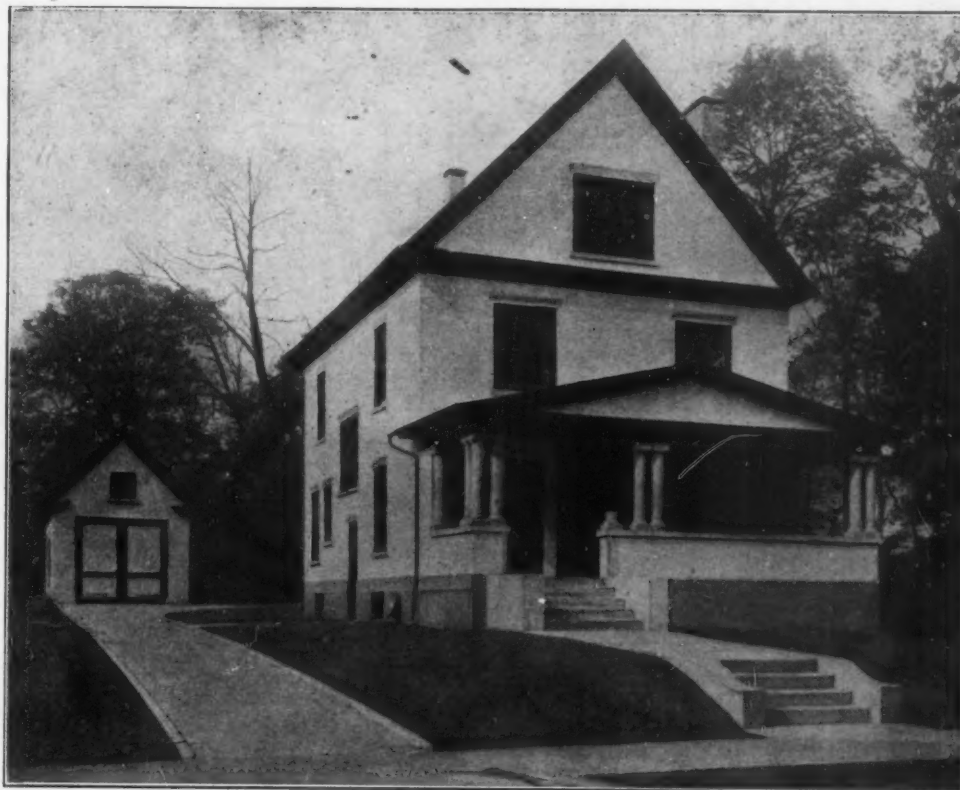


# Low Cost Concrete Homes

The greatest obstacles to the use of concrete in small residence construction are: 1. The expense of form work and contractor's plant in reinforced concrete (monolithic) construction, and 2. The unsatisfactory appearance and poor waterproof qualities of concrete blocks made by the dry-tamp process. Both these obstacles have been overcome by

## The Pauly Concrete Hollow Tile.

Full particulars with regard to the equipment of a suitable factory with the necessary machinery for any location will be cheerfully given, and a conservative and profitable deal will be exhibited for prospective manufacturers of concrete structural tile upon request.



Frank M. Ray's  
Residence  
Youngstown, Ohio.

This residence is fireproof and waterproof. It was built in Youngstown, Ohio, fall of 1908, upon the following contract specifications:

Masonry work complete, including selling price of tile, concrete floor extending under entire basement and combination tile and reinforced concrete floors...	950.00
Excavation of cellar and construction of walks, steps, etc., outside of building proper	125.00
Lumber, hardwood lumber finish for interior and glass (including built-in furniture and plate glass mirrors)	1,000.00
Carpenter work	700.00
Slate roof and spouting	200.00
Plumbing in kitchen, bathroom and basement	250.00
Painting (exterior and interior)	125.00
Furnace and piping	150.00
Total plastering (including material)	200.00
<b>Subtotal</b>	<b>\$3,700.00</b>
Plus 10% profit	370.00
<b>Total contract price</b>	<b>\$4,070.00</b>

The walks, driveway and steps, as well as the porch columns, are of concrete. It is sumptuously finished inside with hardwood, plate glass windows and doors with slate roof and six massive pieces of built-in furniture of elegant design, with plate mirrors, etc., all included in the figure named.

There is a good business opportunity in building homes of this type in any city. We furnish the entire machinery outfit upon the basis of a lease.

Send for booklet showing a large number of houses built with this material.

## CONCRETE STONE & SAND CO., Youngstown, O.

Tell 'em you saw it in ROCK PRODUCTS.



## The Belt Question

is no more what kind or brand of belting shall be used in Stone, Cement or Gravel plants. On your next order please state operating conditions so that we can get at the thickness in

### Leviathan Belting

that will exactly conform to the particular service.

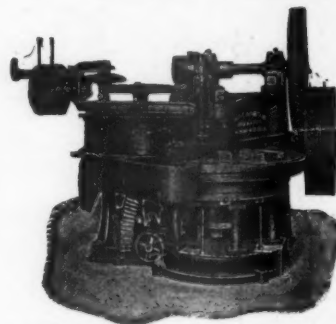
**It is a matter of tremendous importance.  
As belt specialists we can help you.**

Your belting interests are our interests.

**MAIN BELTING COMPANY**  
PHILADELPHIA, PA.

Chicago New York Boston Pittsburg Buffalo

## The American Sandstone Brick Machinery Company, SAGINAW, MICH.



Improved Saginaw Rotary Presses are now being built right or left hand, with extra table for making face and fancy brick, on which double pressure is exerted. Our patented brush does the work of one man, and keeps the plunger plates clean.

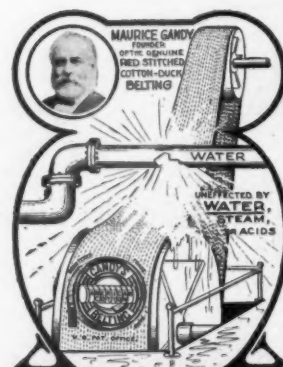
**DON'T** confuse our practical system with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

Our Plants are installed under the supervision of practical engineers who know how Sand-Lime Brick should be made, and can be made.

We have practical plants running successfully, to show to prospective investors.

### We are Not Scientists.

We produce results, because we are the oldest practical Sand-Lime engineering company doing business in the United States, and we defy contradiction. Incorporated April 1902.



## THE GENUINE GANDY

Another Victory for  
**GANDY RED STITCHED COTTON  
DUCK BELTING**

On Nov. 18th, 1907, we secured a judgment against Weller Manufacturing Company for selling imitations of the Genuine Gandy. And on Feb. 5th, 1909, the Circuit Court of the U.S., Western District of Pennsylvania, issued an injunction against C. A. Turner, Inc., from infringing upon our rights. GANDY TRADE-MARKS are registered and will be protected, so don't be deceived. Every belt shows every ten feet "Genuine Gandy Belt."

We also make Gandy Belt Dressing and issue a free Booklet, "Experiences with Gandy."

**THE GANDY BELTING CO. BALTIMORE, MD.**



## HOWELL'S Celebrated Ball Bearing Heavy Geared Post Drills

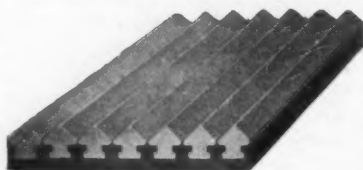
For boring anything that  
an Auger will penetrate.

*Awarded Gold Medal, St. Louis.*

We make 40 different styles machines run by Hand, Compressed Air and Electricity for boring Fire Clay, Coal, Rock, Rock Salt, Gypsum and Plaster Rock. Send to day for our handsomely Illustrated Catalogue.

**HOWELL MINING DRILL CO., PLYMOUTH, PA.,**  
(ESTABLISHED 1878.) U. S. A.

## A Tempered Steel Jaw Plate for Blake Type Crushers



Canda Tempered Steel Crusher Jaw Plate

Patented March 31, 1908

## CHROME STEEL WORKS

CHROME, N.J., U.S.A.  
(FORMERLY OF BROOKLYN, N.Y.)

The Canda Tempered Steel Jaw Plate for Blake Crushers is composed of Forged and Rolled Chrome Steel Bars, cast-welded and also mechanically interlocked into a backing of tough steel—and the wearing face is tempered to extreme hardness. We are equipped to supply both corrugated and smooth face plates for all sizes and makes of Blake Crushers.

The Canda method of cast-welding forged and tempered steel bars into a mild and tough Steel Backing, is adapted also to the construction of Cone Heads for Gyratory Crushers, Segments for Corrugated Rolls, etc., etc.

Our products in this line are sold with our special guarantee that they will wear longer, give better satisfaction and, at our price, prove more economical than any others now on the market.

— Send for Descriptive Pamphlet —

Represented by

J. F. Spellman, 202 Century Building, Denver, Colo.

George T. Bond, Easton, Pa.

George W. Myers, San Francisco, Cal.

Tell 'em you saw it in **ROCK PRODUCTS.**

MAY 3 1909

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